

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

NICE SYSTEMS, INC., a Delaware Corporation, and )  
NICE SYSTEMS, LTD., an Israeli Corporation, )

Plaintiffs, )

v. )

WITNESS SYSTEMS, INC., a Delaware Corporation, )

Defendant. )

**REDACTED  
VERSION**

Civil Action No. 06-311-JJF

**DECLARATION OF MELANIE K. SHARP  
IN SUPPORT OF PLAINTIFFS' COUNTER-STATEMENT OF GENUINE ISSUES OF  
MATERIAL FACT IN DISPUTE IN OPPOSITION TO DEFENDANT'S  
MOTION FOR PARTIAL SUMMARY JUDGMENT ON LACHES**

**MELANIE K. SHARP** declares:

1. I am partner at the law firm Young Conaway Stargatt & Taylor, LLP, Delaware counsel for Plaintiffs NICE Systems, Inc. and NICE Systems, Ltd. ("NICE") in this action. I am a member in good standing of the bar of the State of Delaware.

2. Attached hereto as Exhibits A through DD, which are filed under seal, are true and correct copies of the following:

Exhibit A: Correspondence between Dictaphone Corp. ("Dictaphone") and Eyretel pc ("Eyretel") in 1999 bearing production numbers WSNSDE 061242 - WSNSDE061252.

Exhibit B: Excerpts from the deposition of Nancy Treaster as 30(b)(6) designee of Verint America's Inc., the successor in interest to Witness Systems, Inc., dated June 29, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).

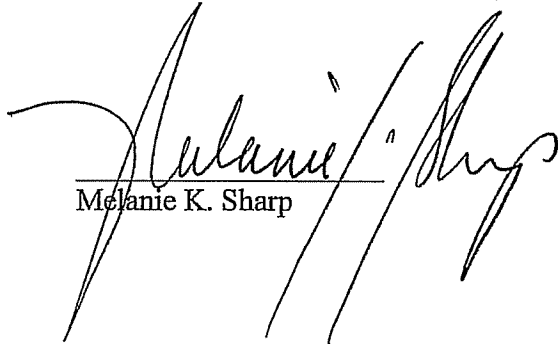
- Exhibit C: Excerpts from Witness Systems Inc.'s Form 10-k as filed with the U.S. Securities and Exchange Commission on March 14, 2003 for the period ending December 31, 2002.
- Exhibit D: Excerpts from Witness Systems Inc.'s Form 10-k as filed with the U.S. Securities and Exchange Commission on March 14, 2004 for the period ending December 31, 2003.
- Exhibit E: Excerpts from the deposition of Dr. Christopher Blair dated May 16, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit F: Press release dated November 9, 2005 entitled "Witness Systems Unveils Next-Generation Recording Engine For Its Impact 360 Solution."
- Exhibit G: Excerpts from Witness Systems Inc.'s Form 10-k as filed with the U.S. Securities and Exchange Commission on April 2, 2007 for the period ending December 31, 2006.
- Exhibit H: Witness Systems' Impact 360 Brochure dated October, 2005.
- Exhibit I: Excerpts from the deposition of Mr. John Bourne dated May 23, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit J: Declaration of Kevin Hegebarth in Support of Witness Systems, Inc.'s Motion to Transfer dated June 29, 2006 filed in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit K: Excerpts from the deposition of Kevin Hegebarth dated August 9, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit L: NICE's Preliminary Infringement Contentions for the '371 and '005 patents filed in Exhibit A to NICE's December 27, 2006 response to Witness Interrogatory 13 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit M: **REDACTED** dated August 2, 2005 bearing production number WSDEPROD 1954542-1954577.
- Exhibit N: Excerpts from the deposition of Jaime Williams dated May 17, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).

- Exhibit O: Excerpts from the deposition of Richard Heap dated September 5, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit P: SalomonSmithBarney Industry Report for the Digital Logging and Quality Assurance Industry dated July 5, 2000.
- Exhibit Q: Complaint dated June 19, 2000 filed in *Dictaphone Corp. v. NICE Systems Ltd. & NICE Systems, Inc.* Civ. No. 00-1143 (CFD) (D. Conn.).
- Exhibit R: Docket Report from *Dictaphone Corp. v. Voice Print International, Inc.*, Civ. No. 2:04-6160 (C.D.Cal.) (ER-RC).
- Exhibit S: Filings in *Dictaphone Corp. v. Mercom Sys. Inc.*, Civ. No. 1:04-5844 (S.D.N.Y.), including: Complaint; Answer and Order dismissing action with prejudice.
- Exhibit T: Dictaphone Communication Recording Systems Management Presentation dated October, 2004 bearing production number NSDE006163.
- Exhibit U: Notice of Entry of Order Regarding the Automatic Stay Imposed By 11 U.S.C § 362 dated January 9, 2001 filed in *Dictaphone Corp. v. NICE Systems Ltd. & NICE Systems, Inc.* Civ. No. 00-1143 (CFD) (D. Conn.).
- Exhibit V: Article entitled "Lernout & Hauspie swallows Dictaphone for \$511m" at [http://www.theregister.co.uk/2000/03/08/lernout\\_hauspie\\_swallows\\_dictaphone/](http://www.theregister.co.uk/2000/03/08/lernout_hauspie_swallows_dictaphone/)
- Exhibit W: Excerpt from NICE Systems Ltd.'s Form 20-F as filed with the U.S. Securities and Exchange Commission on May 17, 2006 for the period ending December 31, 2005.
- Exhibit X: Excerpts from the deposition transcripts of: Dr. Christopher Blair, Mr. Jan Carel Warfield, Mr. John Bourne, Mr. Damien Grant Smith, Mr. Timothy Hannah, Mr. Jamie Williams, Mr. Phillip Gordon Dawes, Mr. Richard Heap, Mr. David Williams, and Mr. Duane Wright, taken in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit Y: Cover page of U.S. Patent No. 5,396,371 patent identifying Mr. Henits, Mr. Swick, Mr. Messologlitis and Mr. Goan as inventors and cover page of U.S. Patent No. 5,819,005 identifying Mr. Henits, Mr. Daly, Mr. Morlando, Mr. Messologlitis and Mr. Leung as inventors. Excerpts from the deposition transcripts of: Mr. Robert Swick, Mr. John Henits, Mr. Constantine Messologlitis, Mr. Salvatore Morlando, and Mr. Daniel Daly, taken in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).

- Exhibit Z: Excerpts from the deposition of Robert Swick dated May 16, 2007 in *NICE Systems Ltd. & NICE Systems, Inc. v. Witness Systems, Inc.* Civ. No. 06-311 (D. Del.) (JJF).
- Exhibit AA: Exhibits B-12 and B-13 to Witness Systems Inc.'s Objections and Responses to NICE's Second Set of Interrogatories dated March 2, 2007.
- Exhibit BB: Email from Daniel A. Kent, counsel for Witness Systems to Joseph M. Drayton, counsel for NICE dated December 21, 2006.
- Exhibit CC: Witness Systems Inc.'s Supplemental Response to NICE's Second Set of Interrogatories dated April 30, 2007.
- Exhibit DD: Eyretel' **REDACTED** Technical Guide Version 1.0 dated May, 2001.

I declare under penalty of perjury that the foregoing is true and correct, pursuant to 28 U.S.C. § 1746.

Executed on November 21, 2007

  
\_\_\_\_\_  
Melanie K. Sharp

**CERTIFICATE OF SERVICE**

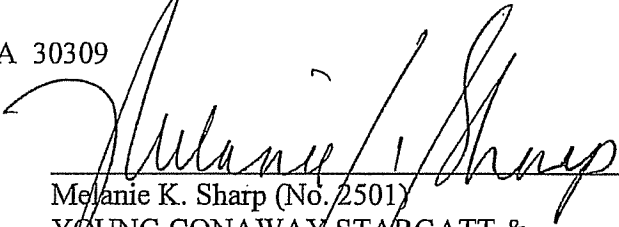
I, Melanie K. Sharp, Esquire, hereby certify that on November 21, 2007, I caused to be electronically filed a true and correct copy of the foregoing document, Declaration of Melanie K. Sharp in Support of Plaintiffs' Counter-Statement of Genuine Issues of Material Fact in Dispute in Opposition to Defendant's Motion for Partial Summary Judgment on Laches, with the Clerk of the Court using CM/ECF, which will send notification that such filing is available for viewing and downloading to the following counsel of record:

William J. Marsden, Jr., Esquire  
Kyle Wagner Compton, Esquire  
Fish & Richardson, P.C.  
919 North Market Street, Suite 1100  
P.O. Box 1114  
Wilmington, DE 19899-1114

I further certify that on November 21, 2007, I caused a copy of the foregoing document to be served by hand delivery on the above-listed counsel of record and on the following non-registered participants in the manner indicated:

**BY E-MAIL**

Noah C. Graubart ([graubart@fr.com](mailto:graubart@fr.com))  
Nagendra Setty ([setty@fr.com](mailto:setty@fr.com))  
Daniel A. Kent ([kent@fr.com](mailto:kent@fr.com))  
Christopher O. Green ([cgreen@fr.com](mailto:cgreen@fr.com))  
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Melanie K. Sharp (No. 2501)  
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Wilmington, Delaware 19899-0391  
(302) 571-6681  
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# **EXHIBIT A**

REDACTED

# **EXHIBIT B**

REDACTED

# **EXHIBIT C**

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## SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

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### FORM 10-K

- ☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2002

or

- ☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 000-29335

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### WITNESS SYSTEMS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware  
(State or Other Jurisdiction of Incorporation or Organization)

23-2518693  
(I.R.S. Employer Identification No.)

300 Colonial Center Parkway  
Roswell, Georgia  
(Address of Principal Executive Offices)

30076  
(Zip Code)

770-754-1900  
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value \$0.01 per share	NASDAQ

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required

to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☐ No ☒

At February 28, 2003, the registrant had 21,881,536 shares of common stock, par value \$.01 per share, outstanding, and the aggregate market value of the outstanding shares of voting stock held by non-affiliates of the registrant on such date was approximately \$32.8 million based on the closing price of \$3.09 per share of such common stock on such date.

## DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its annual meeting of stockholders, currently scheduled for May 29, 2003, are incorporated by reference in Part III of this report.

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## PART I

### Item 1. Business

This annual report on Form 10-K contains forward-looking statements that are not historical facts but rather are based on current expectations, estimates and projections about our business and industry, our beliefs and assumptions. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates" and variations of these words and similar expressions are intended to identify forward-looking statements. These statements are not guarantees of future performance and are subject to risks, uncertainties and other factors, some of which are beyond our control, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements. Forward-looking statements that were true at the time made may ultimately prove to be incorrect or false. Readers are cautioned not to place undue reliance on forward-looking statements, which reflect our management's view only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

The following should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and Notes thereto included elsewhere in this report. Investors should carefully review the information contained in this report under the caption "Factors That May Affect Our Future Results and Market Price of Our Stock" beginning on page 28.

### Overview

We provide the contact center market an integrated performance optimization software suite that enables global enterprises to capture customer intelligence and optimize workforce performance. Our solution is comprised of business-driven multimedia recording, performance analysis and e-learning management applications that are designed to enhance the quality of customer interactions across multiple communications media, including the telephone, e-mail and the Internet. Our enterprise collaboration architecture allows contact center management to share information gathered in the contact center with departments that touch the customer, as well as executives throughout the organization. The result is a proactive management tool for optimizing their customer relationship management ("CRM"), improving communication among departments, fine-tuning workflow, processes and quality of service from within the contact center and throughout the enterprise. As a result, we believe our customers are able to generate additional revenue opportunities, improve profitability, enhance customer retention, reduce employee turnover and improve their overall customer service.

Our eQuality® software suite is designed to enable customer contact centers within a company to capture, evaluate and analyze complete customer interactions through multiple media, such as telephone, e-mail and the Internet, identify performance gaps and then apply targeted electronic learning for continuous performance improvement. The eQuality software records a customer sales/service representative's ("CSR"s) voice interactions with a customer as well as the CSR's corresponding computer desktop activities, such as data entry, screen navigation and data retrieval. By capturing both voice and computer desktop activity and synchronizing them during replay, a company can observe and analyze complete customer interactions as they actually occurred. Supporting the need for Web-based customer interactions driven by the growth of the Internet and e-commerce, the eQuality software suite also enables companies to capture, evaluate and analyze e-mail, Web interactions and guided browser sessions. In addition, the eQuality software suite allows companies to selectively capture, evaluate and analyze customer interactions on any of these mediums based on business criteria that they define, such as key customers, important marketing campaigns and new product introductions.

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We currently provide software to an extensive base of large companies with multiple contact centers, including American Airlines, AT&T, Compaq Computer Corporation, Continental Airlines, EDS, Federal Express, Pitney Bowes, Starwood Hotels & Resorts Worldwide, Target Corporation, Verizon, Visa, Wells Fargo Bank and Xerox Corporation. As of December 31, 2002, we had licensed our software to 418 customers at 1,177 sites.

### Industry Background

Developing and maintaining long-term customer relationships is critical to the success of a business operating in the competitive global marketplace. The rapid growth of the Internet and e-commerce has increased the importance companies place on their customer relationships. Because the Internet enables consumers to easily evaluate products and prices from a wide range of geographically dispersed vendors and quickly change vendors at relatively low cost, it is becoming more difficult for businesses to develop long-term relationships with their customers. As the use of the Internet expands as a business platform, the need for personal contact is essential to enabling a higher quality customer experience. The integration and optimization of customer contacts across all channels of communication is becoming both a strategic and tactical business requirement. In response to these trends, companies adopted CRM initiatives to increase the longevity and profitability of their customer relationships, and developed software applications to automate and evaluate key sales, marketing and customer service processes and improve the effectiveness of their customer interactions. According to AMR Research, CRM remains one of the highest spending priorities in the near-term.

Historically, the focus of CRM applications has been on improving the companies' internal sales, marketing and customer service processes. Competitive pressures resulting from the emergence of the Internet and e-commerce have required companies to shift the focus of their CRM initiatives from improving their internal operations to meeting the needs of their customers. Companies are developing a new set of business principles that place a greater value on improving customer satisfaction and enhancing employee skills to foster customer relationships and increase customer intimacy. We believe that companies, with a better understanding of the characteristics and preferences of their customers, will be able to customize product and service offerings more effectively, which can result in increased customer retention. In addition, these companies will be able to better identify opportunities to sell complementary or higher-end products and to more accurately forecast customer demand.

To understand and improve customer relationships, a company must first improve its specific business processes that involve a high degree of direct customer interaction. Today, many of a company's direct customer interactions occur through call centers. These call centers are generally staffed by telephone operators, often referred to as CSRs, who process a steady flow of outbound or inbound telephone calls relating to the company's products and services. Call centers generally consist of supervisor and agent workstations linked to a central telephone switch and a common computer system. Companies have increased their focus on developing and improving the efficiency of their call center operations.

Historically, call centers have had the ability to handle only telephone and other voice interactions. These call centers have generally focused on either conducting outbound calls, for functions such as collections and product sales, or on managing inbound calls, for purposes such as product support, order processing or customer service. The growth of the Internet and the increased focus of businesses on optimizing customer relationships have contributed to the evolution of traditional single-function, telephone-based call centers into multi-functional, multi-channel customer interaction centers, or contact centers. The emergence of multi-channel customer contact centers has generally increased the volume and complexity of tasks that CSRs are required to perform. As a result, traditional single-function CSRs must now assume more valuable,

multi-function customer service responsibilities. CSRs are now required to handle multiple tasks effectively that involve interaction across a growing number of customer touch points, including telephone, e-mail and the Web. Survey results from the Yankee Group indicate that companies still consider the deployment of Web-based self-service options a crucial priority in their future customer care plans.

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A number of applications have emerged to attempt to address the need to better manage these interactions. However, we believe that most solutions currently available do not adequately address the importance of optimizing customer interactions through recording at the point of contact, evaluating the complete customer interaction, analyzing the CSR's performance, and applying organizational learning through an integrated electronic learning management software solution. For example, without an integrated electronic learning solution, other programs cannot effectively train and develop the CSRs who serve a company's customers. As a result, we believe that there is a significant opportunity in the marketplace for a comprehensive, integrated multimedia solution, which optimizes a company's customer interactions.

### The eQuality Solution

We provide business-driven multimedia recording, performance analysis and e-learning management applications that are designed to enhance the quality of customer interactions across multiple communications media. As a result, we believe our customers are able to generate additional revenue opportunities, improve profitability, reduce employee turnover, enhance customer retention and improve overall customer satisfaction. We believe our eQuality suite of software and services provide the following key business benefits:

- *Increases revenue opportunities.* The eQuality solution enables companies to analyze complete customer interactions, incorporating data from their existing databases and systems. As a result, companies are able to customize their sales and marketing efforts to individual customer preferences or tendencies, improve the selling techniques of their CSRs and sell additional complementary or higher-end products and services to their existing customers. Consequently, we believe companies deploying our solution can generate additional revenue opportunities.
- *Improves profitability.* The eQuality solution improves the overall quality of companies' interactions with their customers, which reduces the costs associated with customer turnover. By providing CSRs with better training, companies can improve the efficiency of CSRs by reducing their average "talk time," which results in decreased telephone charges and reduced total number of CSRs needed to handle the same volume of customer interactions. As a result, we believe companies are able to improve profitability by deploying the eQuality solution to reduce customer turnover and CSR costs.
- *Reduces employee turnover.* The eQuality solution enables the evaluation and analysis of an individual CSR's performance, which companies can use to customize incentives for rewarding CSRs. We believe these customized incentives, together with effective feedback and training, leads to increased CSR job satisfaction, retention of high quality CSRs and reduced costs related to CSR turnover. According to Giga Information Group, the contact center average turnover rate ranges from 20% to 30% annually, and the costs to recruit, interview and train new CSRs are often as high as \$10,000 per agent, depending on the level of skills required.
- *Enhances customer retention.* The eQuality solution helps companies to develop more intimate knowledge of their customers, which should improve the overall quality of products and services being delivered to customers. We believe that the growth in the Internet and e-commerce will increase the importance customers place on high-quality and consistent customer service. It is imperative that companies retain these costly new customers to capitalize on their investment. As a result, we believe that companies who deliver excellent service to their customers will develop longer-term, more profitable customer relationships.

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# **EXHIBIT D**

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**SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 10-K**

(Mark One)

- ☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2003

OR

- ☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 000-29335

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**WITNESS SYSTEMS, INC.**

(Exact Name of Registrant as Specified in Its Charter)

**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**23-2518693**  
(I.R.S. Employer  
Identification No.)

**300 Colonial Center Parkway**  
**Roswell, Georgia**  
(Address of Principal Executive Offices)

**30076**  
(Zip Code)

Registrant's telephone number, including area code **770-754-1900**

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Securities registered pursuant to Section 12(b) of the Act: **None**

Securities registered pursuant to Section 12(g) of the Act:

Title of each class

Name of each exchange on which registered

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Common Stock, par value \$.01 per share

NASDAQ

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☒ No ☐

The aggregate market value of the voting stock held by non-affiliates of the registrant as of June 30, 2003 was \$85.2 million. The number of shares of the registrant's common stock outstanding on February 27, 2004 was 22,524,628.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its annual meeting of stockholders, currently scheduled for May 26, 2004, are incorporated by reference in Part III of this report.

#### Item 1. Business

This annual report on Form 10-K contains forward-looking statements that are not historical facts but rather are based on current expectations, estimates and projections about our business and industry, our beliefs and assumptions. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates" and variations of these words and similar expressions are intended to identify forward-looking statements. These statements are not guarantees of future performance and are subject to risks, uncertainties and other factors, some of which are beyond our control, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements. Forward-looking statements that were true at the time made may ultimately prove to be incorrect or false. Readers are cautioned not to place undue reliance on forward-looking statements, which reflect our management's view only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

The Business section should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and Notes thereto included elsewhere in this report. Investors should carefully review the information under the caption "Factors That May Affect Our Future Results and Market Price of Our Stock" beginning on page 30.

#### Overview

We provide an integrated performance optimization software suite that enables global enterprises to capture customer intelligence and optimize workforce performance. Our solution is comprised of business-driven multimedia recording, performance analysis and e-learning management applications that are designed to enhance the quality of customer interactions across multiple communications media, including the telephone, e-mail and the Internet, and are used primarily in the organization's contact center(s). Our enterprise collaboration architecture allows contact center management to share information gathered in the contact center with other departments that service the customer, as well as with executives throughout the organization. The result is a proactive management tool for optimizing their customer relationship

management ("CRM"), improving communication among departments, and fine-tuning workflow, processes and quality of service from within the contact center and throughout the enterprise. As a result, we believe our customers are able to generate additional revenue opportunities, improve profitability, enhance customer retention, reduce employee turnover and improve their overall customer service and intelligence.

Our eQuality® software suite is designed to enable customer contact centers within a company to capture, evaluate and analyze complete customer interactions through multiple media, identify performance gaps and then apply targeted electronic learning for continuous performance improvement. The eQuality software records a customer sales/service representative's ("CSR's") voice interactions with a customer as well as the CSR's corresponding computer desktop activities, such as data entry, screen navigation and data retrieval. By capturing both voice and computer desktop activity and synchronizing them during replay, a company can observe and analyze complete customer interactions as they actually occurred. Supporting the need for Web-based customer interactions driven by the growth of the Internet and e-commerce, the eQuality software suite also enables companies to capture, evaluate and analyze e-mail, Web interactions and guided browser sessions. In addition, the eQuality software suite allows companies to selectively capture, evaluate and analyze customer interactions on any of these mediums based on business criteria that they define, such as key customers, important marketing campaigns and new product introductions. Our suite of integrated software applications and services allows organizations to build a performance optimization process by capturing customer interactions across all channels, evaluate and analyze the contacts and employee

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performance and then, based on the results, deliver relevant learning to an organization's workforce to enhance performance.

We provide our solutions to an extensive base of large companies with multiple contact centers including Accor, American Airlines, AT&T, British Telecom, Cable & Wireless, Centrica, Compaq Computer, Continental Airlines, Federal Express, The Hartford Financial Services Group, Hertz, HSBC, Lloyds TSB, Pitney Bowes, Royal & SunAlliance, Starwood Hotels & Resorts Worldwide, Target, Telstra, Verizon, Visa, Volkswagen, Wells Fargo Bank and Xerox. In addition, our indirect sales channel is strategically focused on mid-sized companies with generally only one contact center. As of December 31, 2003, we had licensed our software to approximately 1,198 customers at approximately 2,341 sites.

#### *Eyretel Acquisition*

During the first quarter of 2003, we acquired a controlling interest in Eyretel plc ("Eyretel"), a United Kingdom-based provider of compliance and recording solutions for customer contact centers, and completed the acquisition during the second quarter of 2003. We paid 25 pence per share for a total purchase price of approximately £35.3 million, or \$55.3 million. We acquired Eyretel with the intent to extend our presence in international markets and to expand our product line by adding a full-time compliance recording software solution. We commenced the consolidation of Eyretel's results on March 22, 2003, the date we assumed majority ownership of Eyretel. The acquisition was accounted for using the purchase method of accounting.

#### **Industry Background**

Developing and maintaining long-term customer relationships is critical to the success of a business operating in the competitive global marketplace. The rapid growth of the Internet and e-commerce has increased the importance companies place on their customer relationships. Because the Internet enables consumers to easily evaluate products and prices from a wide range of geographically dispersed vendors and quickly change vendors at relatively low cost, it is becoming more difficult for businesses to develop long-term relationships with their customers. As the use of the Internet expands as a business platform, the need for personal contact is essential to enabling a higher quality customer experience. The integration and optimization of customer contacts across all channels of communication is becoming both a strategic and tactical business requirement. In response to these trends, companies have adopted CRM initiatives to increase the longevity and profitability of their customer relationships, and have developed software applications to automate and evaluate key sales, marketing and customer service processes and improve the effectiveness of their customer interactions. According to AMR Research, the CRM market will grow by 10% in 2004, as companies focus on several initiatives including customer analytics.

The focus of CRM applications is to improve companies' internal sales, marketing and customer service processes and, as a result of increasing competitive pressures resulting from the emergence of the Internet and e-commerce, to improve their

ability to identify and address their customers' needs. Companies have been deploying new solutions that recognize improving customer satisfaction and enhancing employee skills is an integral part of their goals to foster customer relationships and increase customer intimacy. We believe that companies, with a better understanding of the characteristics and preferences of their customers, will be able to customize their product and service offerings more effectively, which can result in increased customer retention. In addition, these companies will be able to better identify opportunities to sell complementary or higher-end products and to more accurately forecast customer demand.

To understand and improve customer relationships, a company must first improve its specific business processes that involve direct customer interaction. Frequently, a company's direct customer interactions occur through call centers. These call centers traditionally are staffed by CSRs, who

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process a steady flow of outbound or inbound telephone calls relating to the company's products and services. The technical infrastructure of a call center typically consists of supervisor and agent workstations linked to a central telephone switch and a common computer system. Companies have increased their focus on developing and improving the efficiency of their call center operations.

As the industry has evolved, the traditional call center has transformed from a single-function, telephone-based call center into multi-functional, multi-channel customer interaction center, or contact center. Multi-channel customer contact centers no longer focus only on conducting outbound calls for functions such as collections and product sales, or on managing inbound calls, for purposes such as product support, order processing or customer service. CSRs today handle multiple tasks effectively that involve interaction across a growing number of customer touch points, including telephone, e-mail and the Web. According to Gartner, Inc., the average cost of a web-based self-service inquiry is a fraction of the cost of a call handled by a call center employee, illustrating why companies consider the deployment of web-based self-service options a priority in their future customer care plans.

As more organizations focus on moving customer service from an isolated part of the business, the view of customer service is changing from a detached business function to an integrated set of business processes. Many organizations today have business plans that include creating a positive, consistent customer experience across channels and functions. Providing quality customer experiences remains an important goal for most organizations today. This focus is extending to many areas of the business as they embrace the technology to help identify the root cause of customer frustration.

The current business environment is focused on performance management, particularly optimum customer service levels. Companies want to improve productivity and data quality, as well as the audit capabilities needed to ensure adherence to processes, such as regulatory compliance and fraud reduction. By focusing on performance optimization, companies can help identify barriers and breakdowns, such as where and why errors occur, so they can make adjustments, often before errors affect customers. Our software enables these companies to help improve the quality and productivity of back office functions, such as customer administration and billing, while concentrating on providing high quality customer service. Using business rules, companies can automatically capture transactions placed into unique contact folders for specific business functions, and be notified when the specific business condition exists. Organizations can evaluate operational effectiveness, spot trends and implement tactics to improve performance. Desktop recording captures the screen navigation and exact keystrokes on employee desktops, so users can replay and evaluate transactions just as they occurred. Advanced recording capabilities enable users to define and maintain individual screen-based triggers, so they can capture specific business functions based on the values of individual fields within an application. Recording and reviewing transactions can provide valuable insight into the effectiveness of particular areas of the organization and its impact on the customer experience. By capturing sample transactions, companies can assess the ease with which staff completes processes and the effectiveness of systems.

In some situations, organizations might need to record 100% of all transactions, for fraud detection or regulatory compliance, for example, but often the key is to capture representative samples that are critical to the organization. Our software's business-driven recording capability allows companies' business objectives to drive the types of transactions that they capture. For example, users may choose to randomly capture five percent of certain business functions for coaching and training purposes, record all orders processed beyond a certain transaction amount and capture 100% of high-risk situations for audit purposes.

The convergence of voice and data communications technologies is changing the landscape of today's telecommunications infrastructure. Voice over Internet protocol ("VoIP") is enabling smaller organizations to access

# **EXHIBIT E**

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# **EXHIBIT F**



Home > News & Events > Press Releases > 2005 > Impact 360 Press Release November 9, 2005



Impact 360 Press Release November 9, 2005

## Witness Systems Unveils Next-Generation Recording Engine for Its Impact 360 Solution

*- New full-time recording software provides maximum scalability and resiliency while lowering total cost of ownership through standard, non-proprietary components -*

**ATLANTA (November 9, 2005)** - Witness Systems (NASDAQ: WITS), a leading global provider of workforce optimization software and services, today announced the next-generation, software-based recording engine for its Impact 360™ solution, which was launched last month.

The new recording engine serves as the foundation for the company's Impact 360 Compliance Recording solution, leveraging Witness Systems' years of experience in traditional full-time recording and its leadership in software-based IP Telephony deployments. The new recorder enables enterprises to capture, store and retrieve customer contacts for verification, as well as analyze trends, for improved business intelligence.

Government and industry regulations, liability issues and risk management practices have prompted many organizations to record and archive customer interactions. Impact 360 Compliance Recording is designed to minimize the business risk associated with disputes and fraud, and to allow enterprises to retrieve and replay interactions intuitively using powerful search options.

Commercially available, non-proprietary components lower the cost of ownership by requiring less hardware than competitive offerings and by allowing organizations to source the components themselves instead of purchasing single-source, proprietary systems. According to The Pelorus Group and its "World Contact Center Recording Systems Market" report (June 2005), the recording market is transitioning to a software and services model, where clients source their own servers, storage systems, voice cards and related system hardware.

"Software-centric solutions running on industry standard servers, such as Impact 360 from Witness Systems, are now extremely reliable," said Dick Bucci, associate consultant. "Further, advances in speech and data mining make it much more feasible to interrogate databases in order to get answers to specific questions."

The new recording engine is built to capture up to 100 percent of interactions within traditional TDM environments, and co-exist with IP Telephony environments, to deliver highly-scalable recording - from just a few channels to tens of thousands - by easily networking multiple recorders together.

In addition, the Impact 360 platform helps facilitate the transition from traditional TDM to IP recording because the technologies can co-exist within the same infrastructure. Further, the platform helps protect enterprise investments in hardware by enabling them to migrate their recording infrastructure easily from one environment to the other without the need for heavy reinvestment in costly hardware.

Based on a highly resilient platform, users can configure the recorder to start and stop recording based on several types of events, such as CTI, VOX or D-Channel. This sophisticated level of configuration provides piece of mind to those organizations that are recording for liability and compliance reasons with the assurance that Impact 360 is capturing their calls. For example, if the CTI application is controlling the call recording and it is unable to transmit information, the recorder can immediately go into a fallback mode, ensuring that Impact 360 records and locates the interactions.

The solution can easily be administered and propagated throughout the enterprise using Impact 360's native, browser-based enterprise management interface. The interface helps organizations simplify global system administration by:

- Centralizing the network management for multiple recorders across the enterprise, regardless of their physical location, through an easy-to-use, browser-based enterprise management interface.
- Providing centralized alerts and notification for all recorders in the enterprise, which allows administrators to locate and diagnose system performance for all recorders in their global recording network from a single location.
- Decreasing IT support costs and reducing system configuration errors by allowing users to copy

- current system configurations to multiple recorders throughout their global recording network.
- Consolidating, archiving and retrieving captured contacts easily across the enterprise, leveraging high-capacity, high-speed storage with instant access and a high level of resilience.

#### **Gain New Insight From Analysis of Structured and Unstructured Data**

Impact 360's contact visualization function allows organizations to analyze customer interaction trends based on structured data tagged to recordings, such as number of times transferred, closed sales, disposition type and even if the customer has called in the previous 24 hours. The software helps users quickly identify those interactions that relate to first call resolution, multiple call transfers and sales problems, and enables them to drill to actual recordings where that issue is identified to gain more insight.

With Impact 360, organizations also can analyze trends from the unstructured data contained in the recordings themselves via speech analysis, including key word/phrase and context-based speech mining, as well as proactive trend mining. For instance, the speech analysis functionality can identify the most frequently spoken words, thus highlighting previously undetected trends and allowing organizations to respond quickly.

"By offering increased capacities and using standard, non-proprietary components, Impact 360 helps balance quality of service, resiliency, scalability and cost of ownership," said John Bourne, senior vice president of global product management for Witness Systems. "Our next-generation recorder provides organizations with access to a single view of the customer, enabling them to search and retrieve any interaction or contact regardless of location."

#### **About Impact 360**

Impact 360 is a workforce optimization solution that brings together software and services for workforce management, quality monitoring/full-time recording, e-learning and performance management under a framework that provides a single user interface and centralized administration. By unifying these components, Impact 360 maximizes the information flow within the enterprise, providing deep insight into workforce performance, customer interactions and customer service processes, while driving cost savings, strategic decision-making and competitive advantage.

#### **About Witness Systems**

Witness Systems (NASDAQ: WITS) is a leading global provider of workforce optimization software and services. The company's Impact 360™ solution - which plays a strategic role in the customer interaction centers of Global 2000 and small- and medium-sized businesses (SMBs) worldwide - is also deployed in IP Telephony and back office environments, and throughout the extended enterprise, including branch offices. Witness Systems' software is comprised of quality monitoring, compliance, high-volume and IP Telephony recording solutions, as well as workforce management, actionable learning and performance management. The company's solutions enable organizations to optimize their people, processes and technology throughout the enterprise. Witness Systems' customers benefit from an integrated business consulting, implementation and training methodology that supports a rapid deployment, enabling them to drive revenue, reduce operational costs, and achieve greater customer retention and loyalty. For additional information about Witness Systems, visit [www.witness.com](http://www.witness.com).

**Cautionary Note Regarding Forward-looking Statements:** Information in this release that involves Witness Systems' expectations, plans, intentions or strategies regarding the future are forward-looking statements that are not facts and involve a number of risks and uncertainties. They are identified by words such as "anticipates," "expects," "intends," "plans," "believes," "estimates," and similar expressions. These statements are based upon information available to Witness Systems as of the date of this release, and the company assumes no obligation to update any such forward-looking statement. Forward-looking statements believed true when made may ultimately prove to be incorrect. These statements are not guarantees of future performance and are subject to risks, uncertainties and other factors, some of which are beyond our control and may cause actual results to differ materially from our current expectations. Some of the factors that could cause actual future results to differ materially from current expectations include fluctuations in customer demand and the timing of orders; the company's ability to manage its growth; the risk of new product introductions and customer acceptance of new products; the rapid technological change which characterizes the company's markets; the risks associated with international sales as the company expands its markets, including the risks associated with foreign currency fluctuations; the ability of the company to complete and integrate successfully any acquisitions or investments it may make; and the ability of the company to compete successfully in the future, as well as other risks identified under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the company's Form 10-K for the year ended December 31, 2004 and its Form 10-Q for the quarter ended September 30, 2005, as filed with the Securities and Exchange Commission.

*Witness, eQuality and the Witness logo are United States registered trademarks of Witness Systems, Inc., protected by laws of the U.S. and other countries. All other trademarks mentioned in this document are the property of their respective owners.*

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# **EXHIBIT G**

10-K 1 a07-5920 110k.htm 10-K

## SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

### FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2006

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 000-29335

### WITNESS SYSTEMS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware  
(State or Other Jurisdiction  
of Incorporation or Organization)

23-2518693  
(I.R.S. Employer  
Identification No.)

300 Colonial Center Parkway  
Roswell, Georgia  
(Address of Principal Executive Offices)

30076  
(Zip Code)

Registrant's telephone number, including area code 770-754-1900

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value \$.01 per share	Nasdaq

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer (as defined in Exchange Act Rule 12b-2).

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant as of June 30, 2006 was \$680.1 million. The number of shares of the registrant's common stock outstanding on March 8, 2007 was 34,640,764.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its annual meeting of stockholders, currently scheduled for June 15, 2007, are incorporated by reference in Part III of this report.

consistently high level of customer service across all media channels. Moreover, as a result of recent trends toward offshore and outsourced contact center operations, managing and optimizing the quality of customer interactions has become more important, and more difficult, than ever.

### **Impact 360**

Impact 360, our integrated workforce optimization solution, enables organizations to capture, analyze and act on cross-functional information concerning workforce performance, customer interactions and customer service processes. Impact 360 offers a unified framework for workforce optimization that provides organizations a holistic view of performance and enables them to leverage this information to provide more effective and efficient customer service. Our new solutions framework supports both traditional time division multiplexing, or TDM, switch environments and IP telephony environments and executes on standard operating systems and hardware platforms.

The integrated components of our workforce optimization solution encompass quality monitoring and high-volume compliance recording, workforce management, performance management and e-learning. Impact 360 is available as a fully integrated solution, in specific packages or as separate applications. Impact 360 provides numerous benefits to our customers, including reduced infrastructure costs, rapid implementation and central administration. More importantly, shared access to information across all functions in the customer service value chain enables our customers to make informed decisions that can generate cost savings, improve decision making and increase competitive advantages. We also offer related consulting and implementation services, training and support.

The components of our solution include:

*Quality monitoring and high-volume compliance recording.* Our recording solutions enable the recording of a CSR's multimedia interactions with a customer through traditional voice, Web chat, instant messaging, guided browser sessions and e-mail. The CSR's voice interaction with a customer can be synchronized with the CSR's corresponding computer desktop activities, such as data entry, screen navigation and data retrieval, for review and analysis by supervisors. Quality monitoring selectively records interactions based on user-defined business rules, while high-volume compliance recording stores all interactions between an organization's CSRs and its customers for purposes such as legal or regulatory compliance and sales verification. Our solutions enable companies to evaluate the performance of CSRs, analyze the effectiveness of supporting systems and enhance the quality of service being delivered.

*Workforce management.* Our workforce management solutions simplify the task of forecasting and scheduling, enabling contact centers to balance cost, service level and agent preferences. Users can analyze historical data to forecast future interaction volumes and service handle times in order to schedule the optimal number of agents, with the required skill sets, at the necessary times. As a result, organizations can reduce costs by staffing appropriately to meet workload demands, drive business growth, and improve employee effectiveness and retention.

*Performance management.* Our performance management solutions provide comprehensive analysis of customer interaction and CSR performance. Leveraging performance scorecards with industry-accepted and user-defined key performance indicators, these solutions combine data derived from our evaluation application with data from other business systems, such as customer relationship management software, enterprise resource planning software and integrated telephony applications. Our solution also offers data visualization, search capabilities and speech analytics. Using our solutions, supervisors can obtain a quick, streamlined view of performance relative to strategic organizational objectives. The reporting, dynamic analysis and performance scorecard capabilities of these solutions provide organizations with business intelligence that can lead to increased revenue, heightened service quality and improved operational efficiencies.

*E-learning.* Our e-learning solutions deliver ongoing training tailored to CSR competencies in order to achieve continuous performance improvement. The e-learning management software tracks training

completion and compiles transcripts to enhance CSR skills. When the e-learning applications are integrated with other Impact 360 components, a supervisor can review a recorded customer interaction, evaluate the CSR's performance and prioritize customized training and lesson plans for the CSR. Our solution enables targeted learning content to be delivered directly to a CSR's desktop through a series of standardized lessons or customized lessons created from recorded interactions. E-learning can enable companies to reduce employee turnover and to build customer loyalty through a more highly skilled and motivated workforce.

*Customer Feedback.* Our customer feedback solution surveys customers immediately after their interactions with agents over the IVR, Web, and e-mail with short, dynamic surveys that are delivered based on user-defined business rules. Because these surveys are dynamic and intelligent, context-based, and timely, they impact customers in a measurably positive manner and deliver response rates greater than those obtained through traditional questionnaires. As a result, organizations can move beyond mere sampling to capture data—even with large numbers of customers and multiples sites.

### **Witness Service Network**

The Witness Service Network is our approach to consulting, training and support services that accompany our Impact 360 solutions. Our service and support offerings are designed to enable our customers to achieve a rapid return on investment and realize the maximum benefit our solutions provide by enabling organizations to optimize their contact center operations. Our services consist of implementation services, training, business consulting and customer support.

The initial implementation engagement for our Impact 360 solutions is typically completed within 30 to 60 days from the start date of the implementation phase. Training services provide the skills and knowledge necessary to enable business and technical users to utilize the Impact 360 solutions. Training is provided at our global training centers, on-site at the customers' location or via our web-based education and training management system. In addition, we offer customized training programs tailored to the specific needs of our customers.

Our business consulting services are designed to help customers gain the most value from the Impact 360 solution to optimize the people, processes and technology deployed throughout their contact center operations. Witness Systems Strategic Consulting Services include:

- **AdviceLine**—Provides guidance on operational or business practice questions through ten one-hour, one-on-one sessions with a Witness Systems contact center expert delivered over the phone or web;
- **Business Discovery**—Identifies and quantifies how Witness Systems solutions can improve performance within the contact center or back office operations;
- **Business Implementation Accelerator**—Addresses the broader issues of large-scale workforce optimization software deployments, such as changes to staffing, policies and procedures, that are often overlooked during system implementation;
- **Calibrating Quality for Consistency**—Provides the insight needed to develop and perform consistent quality monitoring evaluations for contact center agents and customer service representatives;
- **Communicating in a Changing Environment**—Develops a plan for communicating the guidelines, expectations, and objectives of an Impact 360 deployment to multiple levels of the organization;
- **Custom Report Enablement**—Shows how to use Impact 360's reporting tools and database schema to create and run custom reports;
- **High Impact Coaching**—Teaches best practices for deploying a successful program to coach contact and service center staff effectively;

*Expand our indirect sales channel.* Historically, the majority of our sales have been driven by our direct sales force. In recent years, we have significantly bolstered our indirect sales channel through reseller, distributor and OEM arrangements with key hardware and service providers in the contact center market. For example, Avaya, an OEM provider, bundles our workforce optimization software products with sales of its converged communications (TDM and IP) infrastructure hardware solutions. We have also announced a similar OEM agreement with Nortel and BT (Trading Room Systems). We are also seeking to expand our relationships with and among systems integrators. In addition to broadening our overall sales leverage, we believe these channel partnerships provide an efficient means to enable us to penetrate one of the fastest growing segments in the contact center industry, the small and medium-sized business segment.

*Expand our business through strategic acquisitions.* We intend to pursue acquisitions of businesses, technologies and products that we believe will complement our existing operations and enhance our position in the workforce optimization market. In 2003 we acquired Eyretel Plc, which strengthened our market presence internationally and expanded our capabilities in the compliance recording market, and in 2005 we acquired Blue Pumpkin Software, Inc., a leading provider of workforce management products. In 2006 we acquired Demos Solutions Consulting Group Ltd. also known as Demos Solutions ("Demos") and Exametric, Inc. ("Exametric"), two leaders in supplying enterprise productivity and resource planning solutions to the financial services industry.

## Research and Development

We believe our software development capabilities are essential to our strategy of enhancing our core technology, developing additional applications, incorporating that technology and maintaining the competitiveness of our software. We devote a substantial portion of our resources to developing new software and features, extending and improving our software technology, debugging and quality testing our products and researching new technological initiatives in our market. We believe that our future success depends in part upon our ability to continue to enhance existing software, respond to changing customer requirements and develop and introduce new or enhanced software that incorporates new technological developments and emerging industry standards.

As of December 31, 2006, we had 301 associates (including 93 contractors) engaged in research and development activities. Research and development expenditures, exclusive of acquired in-process research and development, for the years ended December 31, 2006, 2005 and 2004 were \$33.3 million, \$26.7 million and \$20.8 million, respectively. We anticipate our research and development costs will increase in 2007.

## Competition

Our software and services compete in the emerging market for products that record and analyze customer interactions and provide electronic learning applications. This market is intensely competitive and experiences rapid changes in technology. We believe that we compete effectively and that we enjoy a competitive advantage based upon:

- the functionality and quality of our products,
- the ease of use and ability of our products to operate with a variety of hardware and software products,
- our ability as a single vendor to offer a full suite of applications,
- our ability to implement our products quickly,
- the responsiveness of our customer support, and
- our reputation in the marketplace.

centers—as well as the remote, branch and back offices of global organizations, the workforce optimization solution captures, analyzes and enables users to share and act on cross-functional information across the enterprise. With Impact 360, organizations can improve interactions and the underlying back-office processes that enhance the customer experience and build customer loyalty.

Our Impact 360 solution is an integrated offering of software products that provide comprehensive workforce optimization functionality, including quality monitoring and high-volume compliance recording, workforce management, performance management and electronic learning, or e-learning. Our quality monitoring products record multimedia interactions, including traditional voice, Web chat and email, based on user-defined business rules to enable our customers to evaluate the performance of their CSRs wherever they may be located in the enterprise. Our high-volume compliance applications are designed to record high volume, full-time performance of the voice conversations between CSRs and customers for purposes such as compliance recording and sales verification. Our workforce management products enable our customers to develop strategic staffing plans, deploy skilled resources and evaluate productivity of CSRs. Our performance management applications provide comprehensive analytics, including performance scorecards, and reports of customer interaction and CSR performance. Our e-learning applications deliver ongoing training tailored to CSR needs and competencies. We also provide consulting and implementation services, training and support to customers that use our software products.

We derive product revenue by licensing software and derive services revenue by providing related installation, training, consulting, and maintenance services. We also derive a relatively small portion of product revenue by selling hardware to customers. The majority of our product revenue is derived from recording, quality monitoring (“QM”) and workforce management (“WFM”) software. We sell our products through our direct sales force and through our indirect sales channels. Our indirect sales channels consist of distributors, resellers, systems integrators and Original Equipment Manufacturers (“OEM”). Distributors and resellers purchase product from us at a discount and then resell our products to end-users (or, in the case of distributors, to other resellers) and referral partners are paid a fee for referring sales leads to us or for assisting us in a sales order. Systems integrators are information technology (“IT”) consulting service companies who recommend our products during client engagements. Through OEM agreements, we co-develop products, which are sold by the OEM as part of their portfolio of products.

We intend to continue to expand our global sales channels by entering into new reseller, distributor, OEM and similar arrangements with key vendors in the contact center workforce optimization market. In 2006, 2005 and 2004, approximately 44%, 41% and 32%, respectively, of our license revenue has been derived from the indirect sales channel.

We plan to grow our product revenue and maintain our competitive position from a technology perspective through the timely introduction of new products, such as pre-packaged solutions, which add capabilities such as performance analysis and e-learning management to our core quality monitoring and workforce management solutions. We also believe the market shift from traditional hardware based recording to VoIP represents a significant growth opportunity and our software solutions support both of these recording environments. In addition, we believe our product offerings can be marketed toward branch-office and back-office initiatives for business process monitoring, which represents a new market for us. Factors that may impact our ability to grow our product revenue, however, include our ability to remain competitive from a technology perspective; market acceptance of our new products; our ability to maintain our product pricing integrity; and our ability to expand our global sales channels.

We also plan to grow our services revenue in concert with our product revenue. When our customers license our products, they generally purchase installation, training and one year of support services. Therefore, as we generate product revenue, we also generate related services revenue. In addition, our customers generally renew their maintenance contracts with us each year. Therefore, our maintenance revenue increases as our customer base increases. Factors that may influence our ability to grow our

*Impact of Demos, Exametric, Blue Pumpkin and Optimis Acquisitions*

The acquisition of Demos and Exametric in 2006 increased our reported revenues in 2006 by an estimated \$4.5 million. Operating expenses, expressed as a percentage of total revenue, increased in 2006 compared to the same period in 2005 due to a charge of \$0.8 million in acquired in-process research and development costs, an increase of \$0.5 million in merger-related and integration costs and additional intangible asset amortization of \$0.9 million, all related to these 2006 acquisitions.

The acquisition of Blue Pumpkin and Optimis in 2005 increased our reported revenues in 2005 by an estimated \$25 million. Operating expenses increased in 2005 compared to the same period in 2004 due to a charge of \$9.0 million in acquired in-process research and development costs, an increase of \$3.7 million in merger-related and integration costs and additional intangible asset amortization of \$9.3 million, all related to these 2005 acquisitions.

*Total revenue*

Total revenue increased by 20% to \$221.8 million in 2006 compared to 2005 and 31% to \$185.3 million in 2005 compared to 2004. The increase in total revenue can be attributed to acquisitions and the continued growth of our business. Effective April 1, 2006, we began recognizing revenue from one OEM partner upon receipt of valid purchase orders versus royalty reports because it was determined, based on the Company's historical experience with this particular partner, that fixed and determinable pricing exists at the time the order is placed by the partner. The number of installed customer sites grew to 4,700 sites at the end of 2006 from 4,209 sites at the end of 2005 and 2,799 sites at the end of 2004. International revenue increased 15% in 2006 compared to 2005 and 24% in 2005 compared to 2004.

*Product revenue*

Product revenue includes hardware and software revenue. Although hardware sales are incidental to our business, we expect that we will continue to sell hardware to our existing customers as well as to new customers whose preference is to make joint purchases of hardware and software. It is difficult to estimate future hardware revenue due to its incidental nature.

Product revenue, excluding hardware revenue of \$8.0 million in 2006, \$5.7 million in 2005 and \$7.6 million in 2004, increased 14% and 37% in 2006 and 2005, respectively, compared to prior years. The increase in software revenue growth in 2006 is largely attributed to our expanded product line, particularly Impact 360, as well as additional revenue recognized from the indirect sales channel. Our Impact 360 solution consists of software products and services designed to optimize the workforce, processes and technology involved in the customer service function. We periodically review our revenue recognition policy with regard to our indirect sales channel in order to account for current trends surrounding collectability.

Product revenue as a percentage of total revenue has decreased slightly over the past three years due to increased services revenue, as discussed below. Our product pricing has remained relatively consistent over the past three years. The percentage of product revenue, excluding hardware revenue, derived from our indirect sales channel increased to 44% in 2006 from 41% in 2005 and 32% in 2004. This increase results from our strategy to expand our indirect sales channels.

New customers accounted for 18%, 25% and 22%, respectively, of product revenue, excluding hardware revenue, in 2006, 2005 and 2004, with the balance of revenue representing follow-on revenue from our existing customer base. We receive follow-on revenue from our customers when they purchase additional user licenses or license additional applications at existing sites and when they license our products at new sites. We expect to generate the majority of our product revenue from existing customers during 2007.

inclusion of \$2.2 million stock-based compensation expense. Cost of services revenue increased 30% to \$42.4 million in 2005 compared to 2004 due primarily to an increase in the number of employees and contractors engaged in customer support services mainly as a result of the Blue Pumpkin and Optimis acquisitions. Cost of services revenue as a percentage of services revenue was 39%, 38% and 39% in 2006, 2005 and 2004, respectively. We anticipate that our services margins will remain relatively constant in 2007. We expect our customer service organization to continue to grow over time and, therefore, we anticipate that our cost of services revenue, in absolute dollars, will increase as we grow our customer base.

#### *Operating Expenses*

*Selling, General and Administrative.* Selling, general and administrative ("SG&A") expense consists primarily of personnel costs, sales commissions, marketing programs, professional fees, the amortization of certain intangibles, stock-based compensation expense and provisions for bad debt expense. SG&A expense increased 34% to \$115.0 million in 2006 compared to 2005 due to the inclusion of \$9.2 million stock-based compensation expense, an increase in legal and professional fees, accrued expense associated with severance to be paid to the former CEO and higher staffing levels. Legal and professional fees in 2006 include \$5.5 million related to the stock option review matter. We have Directors and Officers insurance coverage that is provided for defense fees and costs incurred in connection with the class action and derivative action (the "litigation") made against Witness as a result of the stock option review matter. However, in accordance with SFAS No. 5, *Accounting for Contingencies*, we have concluded that an insurance reimbursement receivable cannot be recorded at this time due to uncertainties relating to the recovery that is neither probable nor estimatable as of December 31, 2006. SG&A expense increased 31% to \$86.0 million in 2005 compared to 2004 due primarily to higher amortization expenses and the increased size of our Company after the acquisitions of Blue Pumpkin and Optimis.

*Research and Development.* Research and development ("R&D") expense consists primarily of personnel and consulting costs to support product development, and allocated overhead. R&D costs are generally expensed as incurred and include software development costs incurred prior to the establishment of technological feasibility. Costs incurred subsequent to establishing technological feasibility are capitalized and amortized over their estimated useful lives to cost of product revenue. As of December 31, 2006 and 2005, \$0.7 million and \$0.5 million, respectively, in software development costs were capitalized of which \$0.6 million and \$0.5 million were amortized to cost of product revenue in 2006 and 2005, respectively. R&D expense increased 25% to \$33.3 million in 2006 compared to 2005, primarily due to the increased number of employees engaged in research and development activities and the inclusion of \$2.4 million stock-based compensation expense in 2006. R&D expense increased 28% to \$26.7 million in 2005 compared to 2004 primarily due to the increased number of employees engaged in research and development activities as a result of the Blue Pumpkin acquisition. We expect total R&D expense to increase in absolute dollars but decrease as a percentage of total revenue during 2007 as compared to 2006.

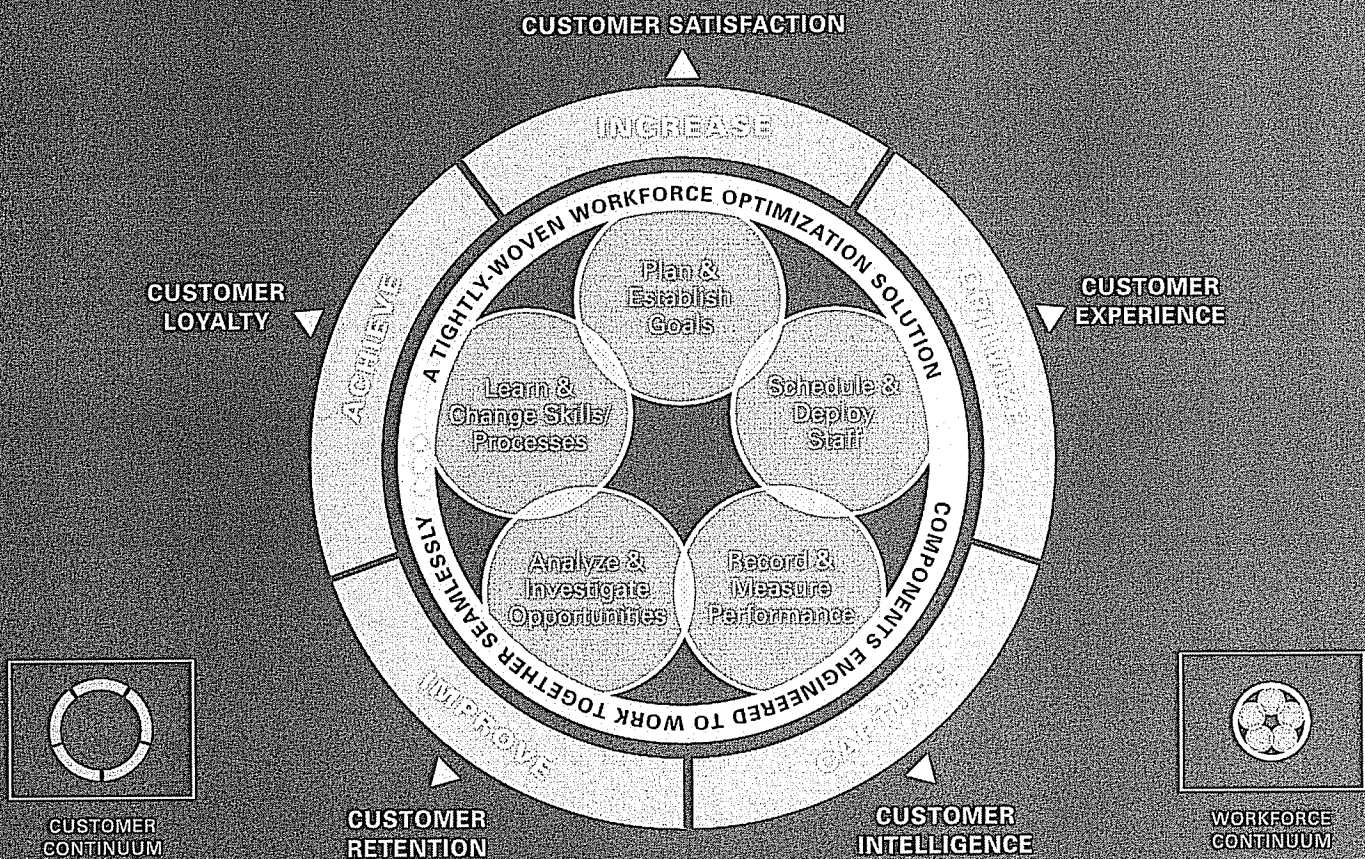
*Merger-Related and Integration Costs.* We incurred merger-related and integration costs of \$2.7 million in 2006, primarily due to the Blue Pumpkin, Demos and Exametric acquisitions. We incurred merger-related and integration costs of \$4.5 million in 2005 due to the Blue Pumpkin and Optimis acquisitions, and \$0.5 million during 2004 due to the Eyretel acquisition. The 2006 and 2005 merger-related and integration costs are comprised primarily of costs of transitional employees and other contractors, travel, legal and advertising costs.

*Acquired In-Process Research and Development.* During 2006 and 2005, we estimated that \$0.8 million and \$9.0 million of the purchase price of Exametric and Blue Pumpkin, respectively, represented acquired in-process research and development ("IPR&D") that had not yet reached technological feasibility as defined by SFAS No. 86, *Accounting for the Cost of Computer Software to Be Sold, Leased or Otherwise Marketed*, and had no alternative future use. Accordingly, these amounts were immediately charged to expense upon consummation of the acquisition. The value of the IPR&D was determined with

# **EXHIBIT H**



## Your single-source workforce optimization solution



Impact 360 brings together **customer interaction recording**, **workforce management**, **performance management** and **actionable learning** with **best-practices consulting** to help you improve everything in your contact center while:

- Increasing customer satisfaction
- Optimizing the customer experience
- Capturing customer intelligence
- Improving customer retention
- Achieving customer loyalty

It's your goal

It's our philosophy

**Improve everything.**



WITNESS SYSTEMS

As companies evolve and mature, whether they are global organizations or small- to medium-sized businesses (SMBs), Witness Systems has the foundation-level and advanced solutions to help them progress through the workforce optimization continuum to extend business value.

Customers can take advantage of the **Impact 360 Operational Series Workforce Optimization Package** – for instance – or opt to begin with the **Workforce Management, Quality Monitoring** and/or **Compliance Recording** versions. This series is comprised of functionality designed to optimize agent performance, reduce risk and automate manual processes, such as monitoring and scheduling.

**Impact 360 Advanced Series Workforce Optimization** builds on Operational Series functionality and focuses on optimizing

contact center performance by raising first call resolution rates, increasing contact center revenue generation and ensuring consistent customer experiences.

**Other add-on functionality** is available to help companies differentiate themselves through customer service by using the contact center to assist the business in driving goals, understanding the root cause of contacts and driving customer loyalty.

IMPACT 360 PRE-PACKAGED SOLUTIONS	WORKFORCE OPTIMIZATION	WORKFORCE MANAGEMENT	QUALITY MONITORING	COMPLIANCE RECORDING
<b>OPERATIONAL SERIES</b>				
Forecasting and Scheduling	•	•		
Basic Adherence	•	•		
Basic Scorecards	•	•	•	
Voice Recording/Search and Replay	•		•	•
Contact Editing	•		•	
Random Rules	•		•	
Evaluations	•		•	
Data Capture	•		•	
<b>ADVANCED SERIES:</b> includes Operational Series, plus the following:				
Advanced Adherence	•	•		
Time Off Management	•	•		
Lesson Management	•	•	•	
Advanced Scorecards	•	•	•	
Advanced Tagging	•			•
Advanced Business Rules	•		•	
Contact Visualization	○		○	•
<b>ADD-ON FUNCTIONS</b>				
Shift Bidding	○	○		
Strategic Planning	○	○	○	
Competency-based Learning	○	○	○	
KPI Scorecards	○	○	○	
Application Analysis	○	○	○	
Data-driven Recording	○		○	
Speech Analytics	○		○	○
Centralized Archiving	○		○	○

○ = Optional Function



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WITNESS SYSTEMS

Witness Systems also has offices in the following countries. Addresses, phone and fax numbers are listed on [www.witness.com](http://www.witness.com).

Australia Brazil Canada Germany India Japan Mexico The Netherlands Vietnam

# **EXHIBIT I**

REDACTED

# **EXHIBIT J**

FROM : SHERATON

FAX NO. : 6194970853

Jun. 29 2006 08:39AM P2

JUN. 29. 2006 10:29AM

4049423596

NO. 0371 P. 2

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

NICE SYSTEMS, INC. and  
NICE SYSTEMS LTD.,

*Plaintiffs,*

v.

WITNESS SYSTEMS, INC.,

*Defendant.*

C.A.No. 06-311-JJF

**DECLARATION OF KEVIN HEGEBARTH IN SUPPORT OF  
WITNESS SYSTEMS, INC.'S MOTION FOR TRANSFER**

I, Kevin Hegebarth, declare under penalty of perjury that I am over twenty-one (21) years of age and am competent to make the following statements based on my personal knowledge:

1. I am the Director of Strategic Analysis for Witness Systems, Inc. ("Witness").
2. Witness is a Delaware corporation with its headquarters and principal place of business in Fulton County, Georgia at 300 Colonial Center Parkway, Roswell, Georgia 30076. This location is in suburban Atlanta.
3. Witness has had its headquarters and principal place of business at 300 Colonial Center Parkway, Roswell, Georgia 30076 since prior to May 10, 2006.
4. Witness does not have any offices, employees, former employees (of which Witness is aware), or documents in Delaware.
5. The bulk of the research and development activities underlying the following products occurred in suburban Atlanta: (1) ContactStore, (2) ContactStore for IP, (3) ContactStore for Communications Manager, (4) Quality for Communications

FROM : SHERATON

FAX NO. : 5194970853

Jun. 29 2006 08:40AM P3

JUN. 29. 2006 10:29AM

4049423596

NO. 0371 P. 3

Manager, and (5) eQuality Balance. Documents concerning those activities are located in suburban Atlanta.

6. Many of Witness' employees and former employees reside in metropolitan Atlanta, Georgia.
7. Messrs. John May (former Senior Vice President of Engineering), Chris Straut (former Vice President of Engineering), Doug Gisby (former Chief Technology Officer), and Chris Jeffs (former Senior Product Manager) are former Witness employees who were integrally involved in development of (1) ContactStore, (2) ContactStore for IP, (3) ContactStore for Communications Manager, (4) Quality for Communications Manager, and/or (5) eQuality Balance and/or sales of these products and they remain in the Atlanta area.
8. Witness is a leading provider of products that allow companies to capture, record, monitor, and analyze their customer service processes, including customer interactions.
9. Witness acquired Eyretel, plc, a British company headquartered in the United Kingdom in 2003.
10. Since the Eyretel acquisition, Witness has integrated and/or rebranded some of Witness' and Eyretel's products.
11. Witness' products have been well received in the market. Last year, Witness recorded approximately \$185 million in revenues.
12. Witness employs approximately 350 people at its Roswell, Georgia location, including over 75 people who have been involved with the research and development of (1) ContactStore, (2) ContactStore for IP, (3) ContactStore for

FROM : SHERATON

FAX NO. : 6194970853

Jun. 29 2006 08:40AM P4

JUN. 29. 2006 10:30AM

4049423596

NO. 0371 P. 4

- Communications Manager, (4) Quality for Communications Manager, and (5) eQuality Balance and over 45 people involved in the sales of these products.
13. The following product names correspond to only four distinct Witness products:
- (1) eQuality ContactStore for IP, (2) ContactStore for IP, (3) Witness ContactStore for Communication Manager, (4) Witness Quality for Communication Manager, (5) Witness ContactStore Business Edition, (6) Witness ContactStore Enterprise Edition, and (7) Impact 360. Those four distinct products are: (1) ContactStore, (2) ContactStore for IP, (3) ContactStore for Communications Manager, and (4) Quality for Communications Manager. The additional product names are largely due to re-branding and product integration.
14. The following product names correspond to only five distinct Witness products:
- (1) Eyretel's ContactStore, (2) Eyretel's MediaStore, (3) Eyretel's Contact 7000, (4) eQuality ContactStore, (5) ContactStore, (6) Witness ContactStore for Communication Manager, (7) Witness Quality for Communication Manager, (8) Impact 360, (9) eQuality Balance, (10) eQuality ContactStore for IP, and (11) Witness ContactStore. The corresponding five distinct products are: (1) ContactStore, (2) ContactStore for IP, (3) ContactStore for Communications Manager, (4) Quality for Communications Manager, and (5) eQuality Balance. The additional product names are largely due to re-branding and product integration.

FROM : SHERATON

FAX NO. : 6194970853

Jun. 29 2006 08:40AM P5

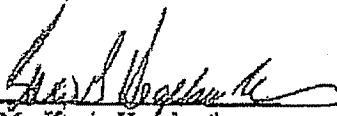
JUN. 29. 2006 10:30AM

4049423596

NO. 0371 P. 5

I declare under penalty of perjury that the foregoing is true and correct, pursuant  
to 28 U.S.C. § 1746.

Executed on June 29, 2006.

  
Mr. Kevin Hogebarth

# **EXHIBIT K**

# REDACTED

# **EXHIBIT L**

NICE v. Witness 42234-006

U.S. Patent 5,396,371

**CONFIDENTIAL -- COUNSEL EYES ONLY****PRELIMINARY INFRINGEMENT CONTENTIONS**

<b>Patent No.:</b>	US 5,396,371
<b>Accused Products:</b>	Eyretel ContactStore, Eyretel MediaStore, Eyretel Contact 7000, eQuality ContactStore, ContactStore, Witness ContactStore for Communication Manager, Witness Quality for Communication Manager, Impact 3 60
<b>Reference Documents:</b>	<ol style="list-style-type: none"> <li>1. Document 1 (NSDE 000011-000052)</li> <li>2. Document 4 (NSDE 000261-000476)</li> <li>3. Document 5 (NSDE 000477-000666)</li> <li>4. Document 6 (NSDE 000667-000730)</li> <li>5. Document 7 (NSDE 000731-000732)</li> <li>6. Document 8 (NSDE 000733-000846)</li> <li>7. Document 9 (NSDE 000847-000966)</li> <li>8. Document 10 (NSDE 000967-001138)</li> <li>9. Document 11 (NSDE 001139-001350)</li> </ol>

<b>CLAIMS</b>	<b>SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS</b>
1. In a method of storing and retrieving audio from a digital audio logger, the steps comprising:  monitoring an audio source,	<ul style="list-style-type: none"> <li>Document 1 - p. 5 provides that "eQuality ContactStore is a powerful, flexible, scalable and resilient solution for contact recording of up to 100% of all voice contacts, across single or multiple distributed sites, on either traditional or IP telephony systems. eQuality ContactStore provides a complete contact recording solution incorporating a powerful, browser-based search, review and replay application as well as a range of online and rules-driven archive storage options to a range of media."</li> <li>Document 1 - p. 8 provides that the ContactStore provides trunk-side recording, extension/station</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>side recording and analogue connections.</p> <ul style="list-style-type: none"> <li>• Document 5 - p. 2-3 provides that the BDR server "monitors and tracks contact center activity."</li> <li>• Document 6 - p. G-5 describes the eRecorder as "[t]he server responsible for recording and playing back all voice and data for monitored interactions. The eRecorder works with the Content Manager and houses the multimedia data for all sessions. To play back customer interactions, the system accesses this recording subsystem used to capture and store voice and data streams as multimedia content associated with Contacts."</li> <li>• Document 7 - p. 1, MediaStore monitors voice interactions.</li> <li>• Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>
storing audio data from the audio source in a buffer,	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture."</li> <li>• Document 1 - p. 8 provides that "[e]ach ContactStore can support up to 10,000 hours of online recording within the chassis (please check with Adtech for latest default storage capacity shipments). Alternatively external RAID 5 resilient online storage can provide up to 126000 channel hours of online storage per ContactStore."</li> <li>• Document 5 - p. 2-3, provides that the BDR server "[u]ses the eRecorder to record agent voice or screen data relating to a contact."</li> <li>• Document 7 - p. 1, MediaStore is a "platform for capturing customer contacts" which stores data for future use.</li> <li>• Document 7 - p. 1, MediaStore holds voice recordings.</li> </ul>
writing the audio data from the buffer onto a digital audio tape and a random access storage device, and	<ul style="list-style-type: none"> <li>• Document 1 - p. 8 provides that "[e]ach ContactStore can support up to 10,000 hours of online recording within the chassis (please check with Adtech for latest default storage capacity shipments). Alternatively external RAID 5 resilient online storage can provide up to 126000 channel hours of online storage per ContactStore. The ContactStore writes to the disk on a first-in first-out basis and will automatically overwrite the oldest data once the disk has become full."</li> <li>• Document 5 - p. 2-3 provides that the eRecorder server "[p]rovides additional near-line storage options, such as high-volume tape archives, disk storage, and others."</li> <li>• Document 8 - p. D-1, "In a single node environment, all the OTG software will reside on one</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
<p>retrieving audio from the random access storage device while audio data is written into the digital audio tape and the random access storage device.</p>	<p>eRecorder, which will also have a HVS device attached to it. In a multinode environment, one eRecorder (typically the Master Node) will have the HVS device attached to it, as well as the OTG MediaStor software.”</p> <ul style="list-style-type: none"> <li>• Document 7 - p. 1, MediaStore has a disk storage option.</li> <li>• Document 1 - p. 7 provides that “[v]iewer - provides a browser-based application through which any user in the enterprise and beyond can search for and replay recorded contacts.”</li> <li>• Document 1 - p. 7 provides that “[r]eplay to the Telset: AudioServer – the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of AudioServer to the configuration allows the user to elect to replay the recordings through a telephone.”</li> <li>• Document 5 - p. 2-3 describes how the “eRecorder server records the voice and screen data of contacts. The data is available for immediate playback or can be archived and retrieved for playback later.”</li> <li>• Document 5 - p. 3-8 states that “Voice Media Channels can be configured with record and playback capability.”</li> <li>• Document 5 - p. 3-11 states that “the eRecorder stores recorded content to disk in a proprietary content database. Later, the BDR Server can playback the content by specifying the Media Channel used to record the content, as well as the start and stop times of the content recording.”</li> <li>• Document 7 - p. 1, MediaStore storage options provide “instant access.”</li> <li>• Document 7 - p. 2, “Whether recording is in progress or is recently completed, MediaStore can replay instantly.”</li> <li>• Document 9 - p. 71, shows the ability to select a “Record Only” or “Both Record and Playback” configuration “in the Voice Card section of the System Administration Application.”</li> </ul>
<p>2. The method of claim 1 including the further steps of providing the random storage device with a primary partition and writing voice data onto the primary partition in time defined manner.</p>	<ul style="list-style-type: none"> <li>• Document 5 - p. 3-1 provides that “[w]ith eQuality Balance, you define the types of interactions that the system records, letting you capture communications that meet certain criteria or that occur at a given time for a certain interval.”</li> <li>• Document 5 - p. 3-6 provides that “[t]he Contact Manager creates contacts to record information about each call received. Recorded information includes the start time, stop time, devices involved in the call, agents involved in the call, and the events themselves.”</li> <li>• Document 10 - p. 15, 17 provides “[e]ach call that is recorded by eQuality ContactStore IP results</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>in one or more files being stored in a disk buffer . . . Each WAV file contains within its header block, a precise time-stamp allowing it to be mixed with its other half to produce an accurately synchronized composite file if needed."</p>
<p>5. In a system for processing audio having an interface for receiving audio from an audio source, a digital signal processor in communication with the interface for compressing the audio signals, a controller in communication with the digital signal processor for receiving audio therefrom and arranging data in a prescribed order, a supervisor in communication with said controller accessing data from said system, and a buffer in communication with the controller for receiving arranged audio from the controller, the improvement comprising:</p> <p>a digital audio tape drive unit in communication with the buffer for receiving arranged audio data from the buffer,</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required."</li> <li>Document 1 - p. 8 provides that "[t]he ContactStore writes to the disk on a first-in first-out basis and will automatically overwrite the oldest data once the disk has become full . . . Each ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> <li>Document 8 - p. D-1, "In a single node environment, all the OTG software will reside on one eRecorder, which will also have a HVS device attached to it. In a multinode environment, one eRecorder (typically the Master Node) will have the HVS device attached to it, as well as the OTG</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>MediaStor software.”</p> <ul style="list-style-type: none"> <li>Document 4 - p. 4-19 “The eRecorder server records the voice and screen data of contacts. The data is available for immediate playback or can be archived and retrieved for playback later. The eRecorder server features a scalable architecture that provides high-volume recording and storage and that allows additional storage expansion using Storage Area Networks (SANs) and Network Attached Storage (NAS) or near-line storage options, such as highvolume tape archives, disk storage, and others.”</li> </ul>
<p>a random access storage device, and</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture.”</li> <li>Document 1 - p. 8 provides that “[e]ach ContactStore can support up to 10,000 hours of online recording within the chassis (please check with Adtech for latest default storage capacity shipments). Alternatively external RAID 5 resilient online storage can provide up to 126000 channel hours of online storage per ContactStore.”</li> <li>Document 4 - p. 4-19 “The eRecorder server records the voice and screen data of contacts. The data is available for immediate playback or can be archived and retrieved for playback later. The eRecorder server features a scalable architecture that provides highvolume recording and storage and that allows additional storage expansion using Storage Area Networks (SANs) and Network Attached Storage (NAS) or near-line storage options, such as highvolume tape archives, disk storage, and others.”</li> <li>Document 5 - p. 3-11 states that “the eRecorder stores recorded content to disk in a proprietary content database. Later, the BDR Server can playback the content by specifying the Media Channel used to record the content, as well as the start and stop times of the content recording.”</li> </ul>
<p>a pair of pointers providing communication between said buffer and random storage device, the first of said pointers operative for transmitting audio data to said random access storage device from said buffer and the second of said pointers being operative to send audio data from said random access storage device to said controller.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required.”</li> <li>Document 11 - p. 89/212, from directory, “The Witness Server is the basic hardware/software suite supplied by Witness Systems. The Telephony Server is hardware and software provided to interface with a telephone office. The Voice Server is the hardware required to record and playback voices.”</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
<p>6. The system of claim 5 further including a speaker in communication with said controller for playing audio retrieved from said random access storage device.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> </ul>
<p>8. An audio data storage device, comprising:</p>	
<p>a random access storage device having a primary partition for storing audio data and a secondary partition for storing means for locating data on said primary partition and a pair of pointers in communication with said random access memory, a first of said pointers being operated to transmit data to said random access storage device and the second of said pointers being operative to retrieve audio data from said random access storage device.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture."</li> <li>Document 5 - p. 3-11 states that "the eRecorder stores recorded content to disk in a proprietary content database. Later, the BDR Server can playback the content by specifying the Media Channel used to record the content, as well as the start and stop times of the content recording."</li> <li>Document 10 - p. 4 "The recorder uses a single disk buffer path on which to retain the most recent recordings . . . Where a more self-contained archival system is required, archival directly to a DVD-RAM drive is supported."</li> <li>Document 10 - p. 7 describes the Replay via Viewer: "The default replay mechanism supported is Viewer. This is a browser-based interface, requiring Internet Explorer Version 5.5. The replay mechanism is hosted on Microsoft's Internet Information Server (IIS), hence the need for Windows 2000 Server to be installed on the PC used for eQuality ContactStore IP if more than 5 clients are to be supported concurrently."</li> </ul>

NICE v. Witness 42234-0006

U.S. 5,819,005

**CONFIDENTIAL -- COUNSEL EYES ONLY****PRELIMINARY INFRINGEMENT CONTENTIONS**

<b>Patent No.:</b>	US 5,819,005
<b>Accused Products:</b>	Eyretel ContactStore, Eyretel MediaStore, Eyretel Contact 7000, eQuality ContactStore, ContactStore
<b>Reference Documents:</b>	<ol style="list-style-type: none"> <li>1. Document 1 (NSDE 000011-000052)</li> <li>2. Document 2 (NSDE 000053-000062)</li> <li>3. Document 3 (NSDE 000063-000260)</li> <li>4. Document 4 (NSDE 000261-000476)</li> <li>5. Document 8 (NSDE 000733-000846)</li> <li>6. Document 9 (NSDE 000847-000966)</li> <li>7. Document 10 (NSDE 000967-001138)</li> <li>8. Document 12 (NSDE 001351-001495)</li> <li>9. Document 13 (NSDE 001496-001500)</li> <li>10. Document 15 (NSDE 001669-001772)</li> <li>11. Document 16 (NSDE 001773-001844)</li> <li>12. Document 32 (NSDE 002850-002901)</li> </ol>

<b>CLAIMS</b>	<b>SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS</b>
1. A modular digital recording logger, comprising:	
a housing;	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required."</li> <li>• Document 1 - p. 7 provides that "Chassis: The ContactStore is based around an industry standard</li> </ul>

NICE v. Witness 42234-0006

U.S. 5,819,005

**CONFIDENTIAL -- COUNSEL EYES ONLY**

<b>CLAIMS</b>	<b>SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS</b>
	<p>PC platform and incorporates a Pentium class processor and PCI bus architecture.”</p> <ul style="list-style-type: none"> <li>• Document 2 - p. 1, 8-10.</li> <li>• Document 3 - p. 1-7 shows the requirements for eRecorder.</li> <li>• Document 3 - p. 2-2 shows the requirements for eRecorder.</li> </ul>
<p>at least two circuit modules in said housing for converting analog voice signals to digital voice signals, each of said circuit modules including at least two terminals for receiving said analog voice signals, each of said terminals being capable of receiving said analog voice signals for recording a two-way conversation;</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side.”</li> <li>• Document 1 - p. 8 provides that “[t]he ContactStore can support both analogue and digital interfaces in the traditional telephony environment, or a mix of the two within the same recording platform . . . Analogue connections can be connected on either trunk or extension side. Extension side analogue taps allow recordings to occur independent of the specific switch type, whereas DET connections require specific support on the interface card for each telephone handset.”</li> <li>• Document 2 - p. 2-5.</li> <li>• Document 12 - p. Servers 4 of 9, shows how the typical components on eQuality Application Server houses “Dialogic Voice Cards — Voice connectivity is handled by one or more dialogic boards.”</li> <li>• Document 13 - p. 4 shows how the eRecorder houses an analog card and an analog passive-tap voice card.</li> </ul>
<p>a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data;</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side.”</li> <li>• Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>• Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>• Document 4 - p. A-53 shows three resource cards; D 160, D 320 and D 640.</li> <li>• Document 2 - p. 2-3.</li> </ul>

**CONFIDENTIAL -- COUNSEL EYES ONLY**

<b>CLAIMS</b>	<b>SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS</b>
a first bus in said housing for providing communication between said circuit module and said compressing circuit;	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> <li>Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>Document 2 - p. 2-3.</li> </ul>
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus; and	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> <li>Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>Document 3 - p. E-4 provides that "[w]hen installing Dialogic resource cards for VTG boards where other Dialogic voice cards are installed, the Dialogic resource cards must have the lowest numbered board IDs</li> <li>Document 2 - p. 2-5.</li> </ul>
a digital audio tape (DAT) drive for storing said compressed voice data.	<ul style="list-style-type: none"> <li>Document 10 - p. 61-62, "Should you require recordings to be archived and hence available beyond the time span catered for by the hard disk storage you have specified, then you need to implement an archiving mechanism. For example, a Windows 2000 Backup that copies the files associated with the recordings to a tape or other removable media.</li> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> <li>Document 4 - p. 4-19 "The eRecorder server records the voice and screen data of contacts. The data is available for immediate playback or can be archived and retrieved for playback later. The</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>eRecorder server features a scalable architecture that provides high-volume recording and storage and that allows additional storage expansion using Storage Area Networks (SANs) and Network Attached Storage (NAS) or near-line storage options, such as high-volume tape archives, disk storage, and others.</p> <ul style="list-style-type: none"> <li>Document 8 - p. D-1, "In a single node environment, all the OTG software will reside on one eRecorder, which will also have a HVS device attached to it. In a multinode environment, one eRecorder (typically the Master Node) will have the HVS device attached to it, as well as the OTG MediaStor software."</li> <li>Document 2 - p. 10.</li> </ul>
<p>2. The modular digital recording logger of claim 1, further including a clock in communication with said computer.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 5 provides that "[w]ith ContactStore Plus, user-configured, business driven rules offer "intelligent" call structuring and organisation for your contact center. The system synchronizes the captured voice and desktop activity during replay, allowing you to observe and analyze complete customer interactions as they actually occur."</li> <li>Document 12 - p. Overview 2 of 4, "Full voice and data synchronization, making it easy to record and review both the voice and data actions of agents -- to achieve thorough and objective call monitoring."</li> <li>Document 15 - p. 20, "The data is stored with a date and time stamp per media."</li> </ul>
<p>3. The modular digital recording logger of claim 1, further including a speaker in communication with at least one circuit module.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>
<p>4. The modular digital recording logger of claim 1, further comprising a hard disk drive in said housing for storing and reproducing said compressed voice data.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture . . . The front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>

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<p>5. The modular digital recording logger of claim 4, further comprising: a computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals; and</p>	<ul style="list-style-type: none"> <li>Document 32 - p. 9 provides "SCSI Hard Drive Array - Typically, all operating system and third party software is maintained on its own SCSI hard drive, mirrored RAID 1 on a single controller. All voice and data files are typically stored on a RAID 5 (stripe set w/parity) array."</li> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required."</li> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>
<p>a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required."</li> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> </ul>
<p>6. The modular digital recording logger of claim 1, wherein said first bus is a time division multiplexing (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to</li> </ul>

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	<p>the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</p> <ul style="list-style-type: none"> <li>• Document 3 - p. E-3 provides that “[i]f the server architecture uses PCI, then select: H100: DSE/DSL T with H.100 cards.”</li> <li>• Document 2 - p. 2-5.</li> </ul>
<p>7. The modular digital recording logger of claim 1, wherein said second bus is a small computer system interface (SCSI) bus and further comprising a SCSI adapter for connecting said computer to said SCSI bus.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</li> <li>• Document 12 - p. Servers 4 of 9, “Typically, all operating system and third party software is maintained on its own SCSI hard drive.”</li> </ul>
<p>8. The modular digital recording logger of claim 1, wherein said compressing circuit is a processor.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</li> <li>• Document 2 - p. 2-3.</li> </ul>
<p>10. The modular digital recording logger of claim 7, further including a random access memory (RAM) for storing said compressed voice data before it is transmitted to the SCSI adapter.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>to the overall system as required.”</p> <ul style="list-style-type: none"> <li>Document 16 - p. 67, “The prototypical eRecorder is a dual processor with one GB of RAM.”</li> </ul>
<p>11. A network system of modular digital recording loggers, comprising:</p> <p>at least two digital recording loggers for logging voice conversations, each of said recording loggers comprising:</p> <p>a housing;</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “ContactStore -- the recording and storage platform. Multiple ContactStores can be deployed to scale up to the number of channels or seats required.”</li> <li>Document 1 - p. 7 provides that “[a] single eWare database can control multiple recorders on a single-site or multi-site basis.”</li> </ul>
	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required.”</li> <li>Document 1 - p. 7 provides that “Chassis: The ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture.”</li> <li>Document 2 - p. 1, 8-10.</li> <li>Document 3 - p. 1-7 shows the requirements for eRecorder.</li> <li>Document 3 - p. 2-2 shows the requirements for eRecorder.</li> </ul>
<p>a circuit in said housing for converting analog voice signals to and from digital voice signals, said circuit modules including at least two terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side.”</li> <li>Document 1 - p. 8 provides that “[t]he ContactStore can support both analogue and digital interfaces in the traditional telephony environment, or a mix of the two within the same recording platform . . . Analogue connections can be connected on either trunk or extension side. Extension side analogue taps allow recordings to occur independent of the specific switch type, whereas DET connections require specific support on the interface card for each telephone handset.”</li> <li>Document 12 - p. Servers 4 of 9 shows how the typical components on eQuality Application Server houses “Dialogic Voice Cards — Voice connectivity is handled by one or more dialogic boards.”</li> </ul>

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	<ul style="list-style-type: none"> <li>Document 13 - p. 4 shows how the eRecorder houses an analog card and an analog passive-tap voice card.</li> <li>Document 2 - p. 2-5.</li> </ul>
<p>a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data,</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>Document 2 - p. 2-3.</li> </ul>
<p>a first bus in said housing for providing communication between said circuit module and said compressing circuit,</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> <li>Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>Document 2 - p. 2-5.</li> </ul>
<p>a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
circuit modules on said first bus,	<ul style="list-style-type: none"> <li>Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>Document 3 - p. E-4 provides that "[w]hen installing Dialogic resource cards for VTG boards where other Dialogic voice cards are installed, the Dialogic resource cards must have the lowest numbered board IDs." (voice processing card = Dialogic resource card).</li> <li>Document 2 - p. 2-5.</li> </ul>
a digital audio tape (DAT) drive for storing said compressed voice data,	<ul style="list-style-type: none"> <li>Document 10 - p. 61-62, "Should you require recordings to be archived and hence available beyond the time span catered for by the hard disk storage you have specified, then you need to implement an archiving mechanism. For example, a Windows 2000 Backup that copies the files associated with the recordings to a tape or other removable media.</li> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> <li>Document 4 - p. 4-19 "The eRecorder server records the voice and screen data of contacts. The data is available for immediate playback or can be archived and retrieved for playback later. The eRecorder server features a scalable architecture that provides high-volume recording and storage and that allows additional storage expansion using Storage Area Networks (SANs) and Network Attached Storage (NAS) or near-line storage options, such as high-volume tape archives, disk storage, and others.</li> <li>Document 8 - p. D-1, "In a single node environment, all the OTG software will reside on one eRecorder, which will also have a HVS device attached to it. In a multinode environment, one eRecorder (typically the Master Node) will have the HVS device attached to it, as well as the OTG MediaStor software."</li> </ul>
a hard disk drive in said housing for storing and reproducing said compressed voice data,	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture . . . The front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> <li>Document 32 - p. 9 provides "SCSI Hard Drive Array -- Typically, all operating system and third party software is maintained on its own SCSI hard drive, mirrored RAID 1 on a single controller. All voice and data files are typically stored on a RAID 5 (stripe set w/parity) array."</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
a first computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals, and	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture."</li> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> </ul>
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive;	<ul style="list-style-type: none"> <li>Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> </ul>
a second computer for processing compressed digital voice signals received from each of said recording loggers; and	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "Replay Station - by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders."</li> <li>Document 1 - p. 14 provides that "[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."</li> </ul>
a third bus connecting each of said recording loggers to said second computer.	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "Replay Station - by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders."</li> <li>Document 1 - p. 14 provides that "[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."</li> </ul>
12. The network system of claim 11, further comprising a clock in communication with said first computer.	<ul style="list-style-type: none"> <li>Document 1 - p. 5 provides that "[w]ith ContactStore Plus, user-configured, business driven rules offer "intelligent" call structuring and organisation for your contact center. The system synchronizes the captured voice and desktop activity during replay, allowing you to observe and analyze complete customer interactions as they actually occur."</li> <li>Document 12 - p. Overview 2 of 4, "Full voice and data synchronization, making it easy to record and review both the voice and data actions of agents - to achieve thorough and objective call</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<p>monitoring.”</p> <ul style="list-style-type: none"> <li>• Document 15 - p. 20, “The data is stored with a date and time stamp per media.”</li> </ul>
<p>13. The network system of claim 11, wherein said third bus is a local area network (LAN) bus.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “AudioServer – the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of AudioServer to the configuration allows the user to elect to replay the recordings through a telephone.”</li> </ul>
<p>14. The network system of claim 13, wherein said second computer and each of said recording loggers further include a LAN adapter for providing connection to said LAN bus.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “AudioServer – the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of AudioServer to the configuration allows the user to elect to replay the recordings through a telephone.”</li> <li>• Document 1 - p. 7 provides that “Replay Station – by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders.”</li> <li>• Document 1 - p. 14 provides that “[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access.”</li> </ul>
<p>15. The network system of claim 11, wherein said first bus is a time division multiplexed (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</li> <li>• Document 2 - p. 2-5.</li> </ul>
<p>16. The network system of claim 11, wherein said second bus is a small computer system interface (SCSI) bus and further comprising a SCSI adapter for connecting said first computer to said SCSI bus.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to</li> </ul>

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	<p>the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</p> <ul style="list-style-type: none"> <li>• Document 12 - p. Servers 4 of 9, “Typically, all operating system and third party software is maintained on its own SCSI hard drive.”</li> </ul>
<p>17. The network system of claim 16, further comprising a random access memory (RAM) for storing said compressed voice data before it is transmitted to the SCSI adapter.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</li> <li>• Document 16 - p. 67, “The prototypical eRecorder is a dual processor with one GB of RAM.”</li> </ul>
<p>18. The network system of claim 11, wherein said compressing circuit is a processor.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side. The ContactStore recording solution can be simply upgraded by adding additional interface cards up to the capacity of the ContactStore chassis and additional networked ContactStore units can be added to the overall system as required.”</li> <li>• Document 2 - p. 2-3.</li> </ul>
<p>20. The network system of claim 11, wherein said second computer is a workstation.</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that “AudioServer – the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of Audioserver to the configuration allows the user to elect to replay the recordings through a telephone.”</li> <li>• Document 1 - p. 7 provides that “Replay Station – by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders.”</li> <li>• Document 1 - p. 14 provides that “[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports</li> </ul>

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	by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."
<p>21. The network system of claim 11, further comprising a speaker in communication with said second computer for reproducing said analog voice signals.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>Document 1 - p. 14 provides that "[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>
<p>22. A method of manufacturing a modular digital recording logger, comprising the steps of:</p>	
<p>selecting a number of circuit modules for converting analog voice signals to and from digital voice signals, each of said circuit modules including at least two terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation;</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required."</li> <li>Document 2 - p. 10.</li> <li>Document 12 - p. Servers 4 of 9 shows how the typical components on eQuality Application Server houses "Dialogic Voice Cards — Voice connectivity is handled by one or more dialogic boards."</li> <li>Document 13 - p. 4 shows how the eRecorder houses an analog card and an analog passive-tap voice card.</li> <li>Document 2 - p. 2-7.</li> </ul>
<p>installing said selected number of said circuit modules in a housing;</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required."</li> <li>Document 1 - p. 7 provides that "Chassis: The ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture."</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<ul style="list-style-type: none"> <li>• Document 2 - p. 1, 8-10.</li> <li>• Document 3 - p. 1-7 shows the requirements for eRecorder.</li> <li>• Document 3 - p. 2-2 shows the requirements for eRecorder.</li> </ul>
installing a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data;	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>• Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>• Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>• Document 2 - p. 2-3.</li> </ul>
installing a first bus in said housing for providing communication between said circuit module and said compressing circuit;	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 2 - p. 2-5.</li> </ul>
installing a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus; and	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 2 - p. 2-5.</li> </ul>
installing a digital audio tape (DAT) drive in said housing for	<ul style="list-style-type: none"> <li>• Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
<p>storing and reproducing said compressed voice data.</p>	<ul style="list-style-type: none"> <li>Document 10 - p. 61-62, "Should you require recordings to be archived and hence available beyond the time span catered for by the hard disk storage you have specified, then you need to implement an archiving mechanism. For example, a Windows 2000 Backup that copies the files associated with the recordings to a tape or other removable media."</li> </ul>
<p>23. The method of claim 22, further comprising the steps of: connecting to said comprising circuit a hard disk drive for storing and reproducing said compressed voice data.</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture . . . The front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the screen activity."</li> </ul>
<p>24. A method of networking a plurality of digital recording loggers, comprising the step of:</p>	
<p>selecting a number of modular digital recording loggers for logging voice conversations, each of said recording loggers comprising:</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required."</li> <li>Document 1 - p. 7 provides that "ContactStore -- the recording and storage platform. Multiple ContactStores can be deployed to scale up to the number of channels or seats required."</li> <li>Document 1 - p. 7 provides that "[ - ]A single eWare database can control multiple recorders on a single-site or multi-site basis."</li> <li>Document 2 - p. 10.</li> </ul>
<p>a housing;</p>	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "[t]he core ContactStore architecture consists of three modular recording components and a search &amp; replay component, which can be networked and replicated as required to achieve the scalability of solution required."</li> <li>Document 1 - p. 7 provides that "Chassis: The ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture."</li> <li>Document 2 - p. 1, 8-10.</li> <li>Document 3 - p. 1-7 shows the requirements for eRecorder.</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
<p>a circuit in said housing for converting analog voice signals to and from digital voice signals, said circuit including a plurality of terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,</p>	<ul style="list-style-type: none"> <li>• Document 3 - p. 2-2 shows the requirements for eRecorder.</li> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 1 - p. 8 provides that "[t]he ContactStore can support both analogue and digital interfaces in the traditional telephony environment, or a mix of the two within the same recording platform . . . Analogue connections can be connected on either trunk or extension side. Extension side analogue taps allow recordings to occur independent of the specific switch type, whereas DET connections require specific support on the interface card for each telephone handset."</li> <li>• Document 12 - p. Servers 4 of 9 shows how the typical components on eQuality Application Server houses "Dialogic Voice Cards — Voice connectivity is handled by one or more dialogic boards."</li> <li>• Document 13 - p. 4 shows how the eRecorder houses an analog card and an analog passive-tap voice card.</li> <li>• Document 2 - p. 2-7.</li> </ul>
<p>a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data,</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>• Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>• Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>• Document 2 - p. 2-3.</li> </ul>
<p>a first bus in said housing for providing communication between said circuit module and said compressing circuit,</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSA bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	<ul style="list-style-type: none"> <li>• Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> <li>• Document 4 - p. A-54 shows the Dialogic D 120.</li> <li>• Document 4 - p. A-55 shows the Dialogic D 160.</li> <li>• Document 2 - p. 2-5.</li> </ul>
<p>a multiplexer circuit in said housing for providing communication between said processor and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus,</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture. The telephony interface cards are interconnected to the record card using the high speed SCSI bus. Each ContactStore system has the capacity to record 128 concurrent channels when the recorder is connected extension side or 120 channels (4 E1 / 5 T1 pipes) when connected trunk side."</li> <li>• Document 4 - p. A-53 shows all the voice processing cards that may be used in the eBalance System.</li> <li>• Document 4 - p. A-53 shows three resource cards: D 160, D 320 and D 640.</li> <li>• Document 3 - p. E-4 provides that "[w]hen installing Dialogic resource cards for VTG boards where other Dialogic voice cards are installed, the Dialogic resource cards must have the lowest numbered board IDs." (voice processing card = Dialogic resource card).</li> <li>• Document 2 - p. 2-5.</li> </ul>
<p>a digital audio tape (DAT) drive for storing and reproducing said compressed voice data,</p>	<ul style="list-style-type: none"> <li>• Document 10 - p. 61-62, "Should you require recordings to be archived and hence available beyond the time span catered for by the hard disk storage you have specified, then you need to implement an archiving mechanism. For example, a Windows 2000 Backup that copies the files associated with the recordings to a tape or other removable media.</li> <li>• Document 1 - p. 8 provides that "[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis."</li> </ul>
<p>a hard disk drive for storing and reproducing said compressed voice data,</p>	<ul style="list-style-type: none"> <li>• Document 1 - p. 7 provides that "[t]he ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture . . . The front panel of the recorder includes an LCD display, control panel and replay loudspeaker, which support the configuration, alarming, control and replay of calls directly from the recorder if required."</li> <li>• Document 9 - p. 8, shows that Live Monitor can "[p]rovide[] the ability to Live Monitor an agent and to replay audio to the handset or over the network (using PC speakers,) synchronized with the</li> </ul>

NICE v. Witness 42234-0006

U.S. 5,819,005

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
a first computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals, and	<p>screen activity.”</p> <ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “Chassis: The ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture.”</li> <li>Document 1 - p. 8 provides that “[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis.”</li> </ul>
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive;	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “Chassis: The ContactStore is based around an industry standard PC platform and incorporates a Pentium class processor and PCI bus architecture.”</li> <li>Document 1 - p. 8 provides that “[e]ach ContactStore supports up to two hot-swap DAT (Digital Audio Tape) drives within each chassis.”</li> </ul>
installing said selected number of said recording loggers;	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “ContactStore – the recording and storage platform. Multiple ContactStores can be deployed to scale up to the number of channels or seats required.”</li> <li>Document 1 - p. 7 provides that “[a] single eWare database can control multiple recorders on a single-site or multi-site basis.”</li> </ul>
installing a second computer for processing compressed digital voice signals received from each of said recording loggers; and	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “Replay Station – by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders.”</li> <li>Document 1 - p. 14 provides that “[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access.”</li> </ul>
installing a third bus connecting each of said recording loggers to said second computer.	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that “AudioServer – the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of Audioserver to the configuration allows the user to elect to replay the recordings through a telephone.”</li> <li>Document 1 - p. 7 provides that “Replay Station – by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders.”</li> <li>Document 1 - p. 14 provides that “[t]he Viewer application is designed to be accessed through a</li> </ul>

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CLAIMS	SUPPORT FOR PRELIMINARY INFRINGEMENT CONTENTIONS
	Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."
25. The method of claim 24, wherein said third bus is a local area network (LAN) bus.	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "AudioServer -- the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of AudioServer to the configuration allows the user to elect to replay the recordings through a telephone."</li> </ul>
26. The method of claim 25, wherein said second computer and each of said recording loggers further include a LAN adapter for providing connection to said LAN bus.	<ul style="list-style-type: none"> <li>Document 1 - p. 7 provides that "AudioServer -- the default means of replaying recordings is through the LAN / WAN to the PC soundcard but the addition of AudioServer to the configuration allows the user to elect to replay the recordings through a telephone."</li> <li>Document 1 - p. 7 provides that "Replay Station -- by fitting a PC with a DAT tape drive it is possible to search for and replay recorded contacts at a separate location not networked with the ContactStore recorders, or to make archived contacts available across the network without loading them into the recorders."</li> <li>Document 1 - p. 14 provides that "[t]he Viewer application is designed to be accessed through a Web browser, such that users throughout the company can view contacts, evaluations, and reports by allowing all authorized users to search for and replay recorded contacts from any workstation with Intranet access."</li> </ul>

# **EXHIBIT M**

REDACTED

# **EXHIBIT N**

REDACTED

# **EXHIBIT O**

# REDACTED

# **EXHIBIT P**

**SALOMON SMITH BARNEY**

**Industry Report**

**EQUITY**

**RESEARCH**

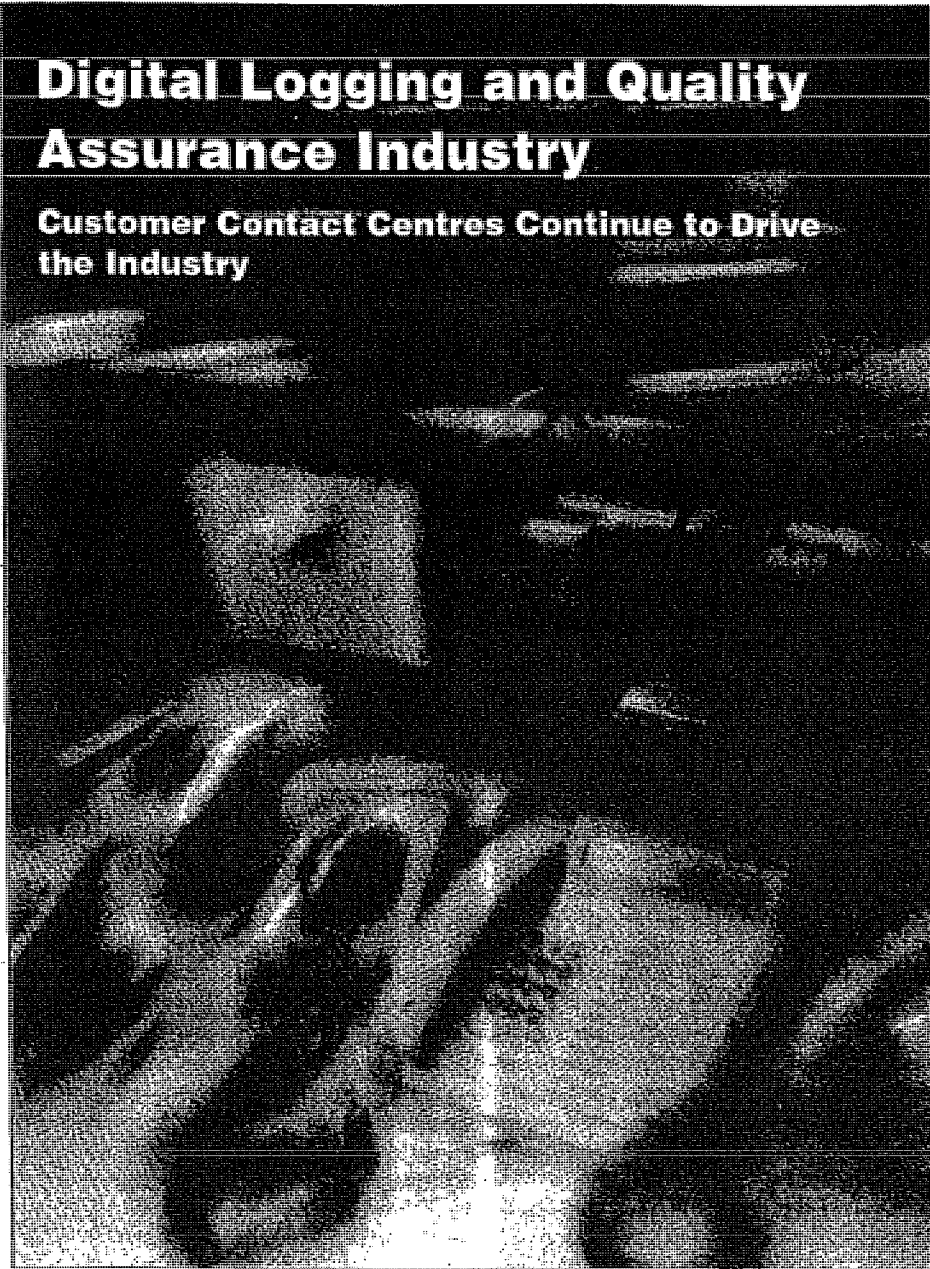
**Technology — General**

**5 July 2000**

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**Digital Logging and Quality Assurance Industry**

**Customer Contact Centres Continue to Drive the Industry**



A member of citigroup

**SALOMON SMITH BARNEY**

**Industry Report**

**EQUITY**

**RESEARCH**

**Technology — General**

**5 July 2000**

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New York

## **Digital Logging and Quality Assurance Industry**

**Customer Contact Centres Continue to Drive the Industry**

- **Healthy revenue growth continued in the industry in 1999**
- **Industry numbers show trends moving toward customer contact centre segment, which represents the first mass market for the industry**
- **Recording, quality monitoring, and Customer Relationship Management (CRM) are converging, resulting in the emergence of a new segment — Customer Experience Management (CEM)**
- **The new CEM segment is a natural extension of CRM, and should provide the industry with strong growth**

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Digital Logging and Quality Assurance Industry – 5 July 2000

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# Executive Summary

***The recording and voice/data logging industry posted healthy gains again during 1999. With customer contact centres as the focus, the industry should continue to see strong growth. Traditional logging companies are developing integrated multimedia recording and quality monitoring capabilities, as well as CRM integration tools.***

## **Steady revenue growth continues in the industry in 1999**

For 1999, we estimate that the industry reached revenues of approximately US\$658 million, representing a 16% increase over 1998 industry sales of US\$567.5 million. Gartner Group and Tern Systems both estimate that the global market will grow to US\$1.8 billion by 2003, representing a CAGR of 30% over the 1999 revenue figures.

## **Trends moving toward customer contact centre segment**

In 1999, business grew most rapidly in the contact centre/quality assurance area. Customer contact centre business accounted for 41% of the industry's sales in 1999, and we believe its share will continue to grow to well over 50% by 2001, with a CAGR of 33%. Fuelled by the advent of web-based transactions, and focus on customer care and retention, the customer contact centre represents the most important line of business for recording technologies and is the industry's first market to have mass appeal. Nice Systems (NICE) is the market share leader in this segment, followed by e-Talk, and Comverse (CMVT). Witness Systems (WITS) is the fastest growing company in the segment with 73% growth in revenues over 1998-99.

## **Recording, quality monitoring and CRM are converging**

Following the lead of pure quality monitoring firms' e-Talk, formerly known as Teknekron Infoswitch, and Witness Systems (WITS), traditional recording companies are developing software to perform quality monitoring and customer interaction management. The lines between recording and quality monitoring are blurring and, as a result, a new segment is emerging. Customer Experience Management, or CEM, provides comprehensive multimedia recording, quality monitoring, data mining, and CRM integration modules on a single platform.

## **The new segment, CEM, is a natural extension of CRM**

In 1999, progress continued in meeting the demand for integrating data logging and quality monitoring products with CRM applications. We believe that enterprises will increasingly recognise the CEM platform as a strategic tool for maintaining customer satisfaction and loyalty, and will make it a natural extension of CRM. Therefore, we estimate that the emerging CEM segment will grow from its current nascent stage to be worth approximately US\$1.1 billion by 2006. We have not included CEM revenue projections within the overall industry revenue projections in this report.

## Market Analysis

Voice continues to remain the principal means of communication, even with the development of high-speed networks and the Internet. Voice record keeping is an essential part of any organisation that relies on detailed customer or client information. Multichannel archiving recorders or loggers capture and record voice data transmitted over telephone lines and other forms of communication. Voice data and computerised contact records are filed next to one another so that detailed information from telephone conversations can be matched with database specifics. This ensures a higher level of efficiency, especially in customer contact centres.

*Historically, the industry has had specialised players in data logging and in quality monitoring*

The broad change affecting the recording industry is the digitisation and specialisation of technology in the telecommunication service sector. With the advent of digital communication, digital recording systems interface with digital networks, increase transfer and retrieval speeds, and decrease the need for storage. Specialisation has enabled several firms to become involved in making or providing specific elements of the overall logging solution, from recording to analysis and quality monitoring.

*Traditional hardware vendors have been developing analytical software tools, and offering more comprehensive solutions*

However, the number of hardware suppliers is decreasing as the structure of the market changes. Traditional recording vendors have been making a transition from pure hardware manufacturing to becoming more software oriented, and offering comprehensive solutions to the market. They have been quite active over the past year in ramping up their technology offerings, both through acquisitions and through internal development.

The pure quality assurance firms e-Talk and WITS led the way in developing software solutions for monitoring and evaluating customer interactions. Such tools are used for ensuring that customer care standards are met, training agents and, ultimately, building brand loyalty. This has become especially important since, in light of the explosion in e-commerce transactions, a contact centre agent may be the only company representative that a customer will ever have contact with. As a result, the contact centre is becoming an increasingly important touch point.

To meet the challenge of next-generation contact centres, strict logging companies, which traditionally specialised in compliance recording, began adding quality monitoring components to their products. These companies are blurring the lines between data recording and quality monitoring, and as a result, are effecting the creation of a new segment in the market — Customer Experience Management, or CEM.

CEM products, by our definition, integrate recording, quality monitoring, analytical and surveying tools, and offer integration with CRM applications. The industry's aim, by offering such a wide range of integrated tools, is to provide the market with comprehensive customer interaction solutions that complete the client view. We see this emerging segment as a natural extension of the CRM market, and believe that it will provide the industry with an opportunity for strong, rapid growth. Indeed, we estimate that the industry as a whole will grow to US\$975 million by 2001, from US\$658 million in 1999, representing a CAGR of 22%, and we believe that CEM will be one of the major drivers of that growth. However, CEM estimates are not included in the industry projections in this report. With CEM we expect that the growth in 2001 will be greater.

The first seeds of CEM were planted by the pure quality assurance firms such as WITS and e-Talk, whose products specialise in selectively recording and evaluating customer interactions on a variety of platforms, including e-mail and web-chat. These companies also led the way in CRM integration (WITS, in fact, has, perhaps, the broadest range of front-office CRM partners, and is the Siebel Alliance Partner for Call Centre Monitoring). Eyretel, CMVT, NICE and other traditional logging firms have seen the promise of interaction management, and have been integrating those features into their products, alongside their recording capabilities.

### 1999 review

For 1999, we estimate that the industry reached revenues of approximately US\$658.4 million, representing a 16% increase over 1998 industry sales of US\$567.5 million. Many industry players have spent the last 12-18 months emphasising new product development and service.

*NICE was the market leader in 1999*

We estimate that NICE was the market leader in 1999, with 17% of the total market share, on a revenue basis. We attribute this mainly to NICE's strength in the contact centre and financial institutions segments. Dictaphone followed with 15% of total market share, driven by its dominance of the public safety segment and relative strength in the financial institutions segment.

**Figure 1. Revenues and Market Share — Data Logging and Quality Monitoring Industry, 1998-01E (US Dollars in Millions)**

Vendor	1998 Revenues	1998 Mkt Share	1999 Revenues	1999 Mkt Share	2000E Revenues	2000E Mkt Share	20001E Revenues	20001E Mkt Share
ASC	16.00	3%	25.00	4%	26.30	3%	32.00	3%
Comverse	70.40	12%	78.00	12%	100.00	13%	130.00	13%
Dictaphone	114.00	20%	98.20	15%	109.98	14%	126.48	13%
e-Talk	27.00	5%	45.00	7%	60.75	8%	80.49	8%
Eyretel	29.00	5%	42.00	6%	55.00	7%	73.00	7%
NICE	85.80	15%	115.14	17%	136.44	17%	174.30	18%
Witness	13.30	2%	22.52	3%	36.80	3%	52.30	5%
Racal	67.00	12%	80.00	12%	96.00	12%	120.00	12%
TEAC	19.00	3%	22.50	3%	24.75	3%	27.23	3%
Others	126.00	22%	130.00	20%	150.00	20%	160.00	16%
<b>TOTAL</b>	<b>567.50</b>		<b>658.36</b>		<b>796.02</b>		<b>975.80</b>	

Sources: Company reports and Salomon Smith Barney.

Not all firms in the industry, however, have direct sales forces. NICE, for example, sells 100% of its products through resellers who receive generous discounts ranging between 40% and 60%. Other industry players do the same, with varying proportions of their sales. The revenue figures, therefore, do not give a complete picture of market share distribution. Figure 2 shows our estimates, taking into account discounts, for the market share based on units shipped.

**Figure 2. Implied Revenues and Market Share — Data Logging and Quality Monitoring Industry, 1999-01E (US Dollars in Millions)**

Vendor	1999 Implied Revenues	1999 Implied Mkt Share	2000E Implied Revenues	2000E Implied Mkt Share	2001E Implied Revenues	2001E Implied Mkt Share
ASC	35.63	5%	37.48	5%	45.60	5%
Comverse	81.9	1%	105.00	13%	136.50	14%
Dictaphone	100.65	1%	115.48	15%	132.80	14%
e-Talk	45	6%	60.75	8%	80.49	8%
Eyretel	49.56	7%	64.90	8%	86.14	9%
NICE	172.71	23%	204.66	26%	261.45	27%
Witness	22.52	3%	36.80	5%	52.30	5%
Racal	98	13%	117.60	15%	147.00	15%
TEAC	22.5	3%	24.75	3%	27.23	3%
Others	130	17%	150.00	19%	160.00	16%
<b>TOTAL</b>	<b>758.46</b>		<b>917.42</b>		<b>1,129.52</b>	

Sources: Company reports and Salomon Smith Barney.

**Business by region**

Business was strong across all regions in 1999, with the strongest market being in the US. We expect that the US will continue to remain the largest contact centre market but expect growth in all regions. We believe that in the coming years Europe and Latin America will be the fastest growing markets. Currently, Europe is lagging behind the US by approximately two years in technology implementations and integration of quality assurance.

The following table summarises the recording industry's business by region.

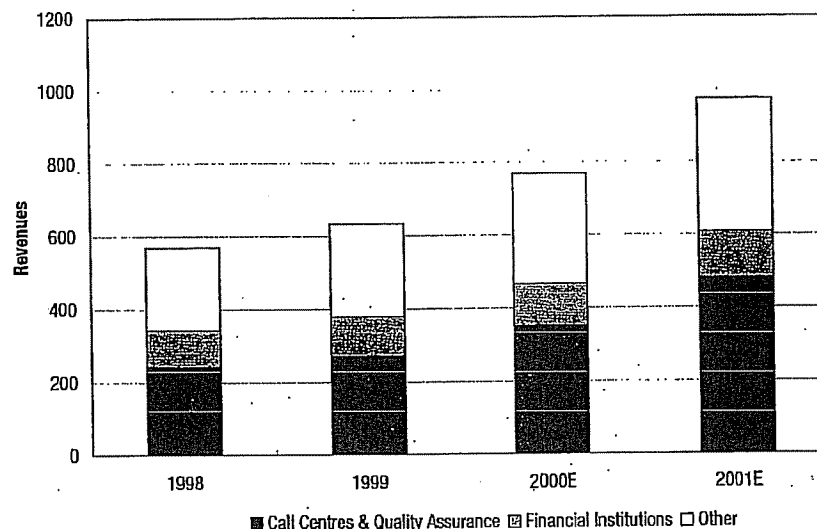
**Figure 3. 1999 Business by Region**

Vendor	N. America	Europe	RoW
ASC	7.6%	71.2%	21.20%
Comverse	50%	30.0%	20.0%
Dictaphone	72%	15.0%	13.0%
e-Talk	88%	8.0%	4.0%
Eyretel	33%	43.5%	23.50%
NICE	52.4%	34.50%	13.10%
Racal	21%	59.0%	20.0%
TEAC	30%	10.0%	60.0%
Witness	97.5%	2.50%	0.0%
Others	30%	50.0%	20.0%

Sources: Company reports and Salomon Smith Barney.

**Vertical market splits**

Business in the call centre/quality assurance area grew the most rapidly in 1999, gaining a significant share of the total market. Even though traditional segments have lost market share (and will continue to do so) since early 1999, they should experience some moderate absolute growth and stability.

**Figure 4. Revenues by Segment, 1998-01E (US Dollars in Millions)**

Sources: Company reports and Salomon Smith Barney.

**Outlook — contact centres and quality assurance**

The very reputation of a company rests in each interaction a customer has with a call centre agent. Call centres demand not only voice logging systems but also quality monitoring tools that enable them to monitor agent performance and provide feedback for training. Such quality monitoring tools are especially important in the age of e-commerce, which has led to increased interaction between customers and call centre agents. With the competition just 'a click' away, interaction management has become an important tool for ensuring customer care and building customer loyalty. Indeed, it is this combination that has made call centres the fastest growing segment in the recording industry, and has created the demand for innovative, integrated solutions.

**Figure 5. Revenues and Market Share, Contact Centre and Quality Assurance Segment, 1999-01E (US Dollars in Millions)**

Vendor	1999 Revenues	1999 Mkt Share	2000E Revenues	2000E Mkt Share	2001E Revenues	2001E Mkt Share
ASC	5.00	2%	7.00	2%	10.40	2%
Comverse	30.00	11%	40.00	11%	50.00	10%
Dictaphone	20.00	7%	20.00	6%	30.00	6%
e-Talk	45.00	17%	60.00	17%	80.49	17%
Eyretel	21.50	8%	30.25	9%	40.15	8%
NICE	64.62	24%	80.50	23%	113.30	24%
Witness	22.40	8%	25.00	7%	35.00	7%
Racal	22.52	8%	36.80	11%	52.30	11%
Others	40.00	15%	50.00	14%	70.00	15%
<b>TOTAL</b>	<b>271.04</b>		<b>350.30</b>		<b>481.64</b>	

100% of sales for e-Talk and Witness were in the pure quality assurance market.

Excluding CEM revenues.

Sources: Company reports and Salomon Smith Barney.

*Sales of digital logging and quality assurance products should experience CAGR of 33% between 1999 and 2001*

The call centre market is growing at a very strong pace, and with our estimate that the large customer contact centres (100+ agents) are only 20% penetrated, the growth should continue. We estimate that sales of logging and quality monitoring systems to the call centre market reached approximately US\$271 million in 1999, up from US\$210 million in 1998 — a growth of 29%. Those revenues represent 37% of the total sales in the industry for 1998 and 41% for 1999, and we expect that percentage to grow to well over 55% by 2003. Indeed, we expect that from 1999 until 2001 alone, sales of logging and quality assurance products will experience a CAGR of 33%.

The biggest change shaping the market is the move into quality monitoring and multimedia recording by traditional logging firms. WITS and e-Talk, traditional quality monitoring companies, set the market shift by offering CRM-integrated products that selectively record and analyse multimedia interactions. Eyretel, a traditional logging company, launched its internally developed quality monitoring and data-mining product in 1998. Other logging companies have been developing modules, such as VoIP, screen capture, and data mining, and have been recently consolidating these modules into comprehensive platforms that integrate with CRM products.

*NICE was the leader in the contact centre and quality assurance segment with a 24% share*

We estimate that NICE achieved 24% global market share this year in the contact centre and quality assurance segment, the largest share in the industry. We estimate that e-Talk, with an estimated US\$45 million in sales of quality assurance products in 1999, is the largest player in the pure quality assurance space.

### **Outlook — financial institutions**

Nasdaq requirements mandate that voice communications concerning over-the-counter trading be recorded and logged. Furthermore, many financial institutions voluntarily log all voice communications between clients and brokers and on trading floors in order to satisfy needs for backup and dispute resolution.

**Figure 6. Revenues and Market Share, Financial Institutions Segment, 1999-01E (US Dollars in Millions)**

Vendor	1999 Revenues	1999 Mkt Share	2000E Revenues	2000E Mkt Share	2001E Revenues	2001E Mkt Share
ASC	9.00	8%	8.70	7%	9.30	7%
Comverse	0.80	1%				0%
Dictaphone	21.35	20%	24.20	21%	25.30	20%
Eyretel	10.25	10%	13.75	12%	18.25	14%
NICE	35.21	33%	36.84	31%	33.12	26%
Racal	16.00	15%	19.20	16%	22.80	18%
Others	15.00	14%	15	13%	20.00	16%
<b>TOTAL</b>	<b>107.61</b>		<b>117.68</b>		<b>128.76</b>	

Sources: Company reports and Salomon Smith Barney.

*We estimate that NICE was the segment leader in 1999 with 33% market share*

We estimate that there are approximately 250,000 brokers worldwide each using on average four telephone lines. Under assumptions that logging equipment must be replaced every five to seven years and that the cost per seat is US\$500-700, we estimate the size of this sector to be US\$107 million in 1999. Given that roughly 70% of financial institutions already use digital logging equipment, we expect that this sector will experience growth of about 10% per annum over the next few years, as sales will be primarily for replacement and new capacity, as well as to customers in Asia, where only roughly half of all logging equipment is digital.

The segment experienced a slowdown in sales during 1999 because of Y2K related moratoriums on technology installations by financial institutions.

We estimate that NICE was the segment leader in 1999 with 33% of the global market share.

We believe the next upgrade in this segment will include adding data and voice mining components to compliance recording platforms, which could give the segment a boost. Data and voice mining will essentially be used for training and internal supervision by financial institutions.

CMVT decided to abandon sales to this segment in 1999.

*We estimate that the air traffic control segment was worth US\$30 million in 1999...*

#### **Outlook — air traffic, public safety and government**

The air traffic control segment tends to be volatile in terms of revenues because contracts tend to be lumpy. The segment itself was established because international aviation regulations mandate the logging of voice and radio communications of aircraft control towers with aircraft. Such logging is critical for the investigation of accidents and flight offences. We expect between 5% and 10% growth in this segment until 2001, and estimate that the segment generated revenues of US\$30 million in 1999. The next significant contract will be from the US FAA to equip airports that do not yet have digital logging equipment. In the past, NICE has won the FAA digital logging contracts, and we believe this trend will continue. Other companies that are active in this space include Racal, Eyretel and ASC.

*... the public safety segment was worth US\$110 million in 1999...*

We believe that the public safety segment had sales of US\$110 million in 1999. The segment is made up of emergency response centres (911), law enforcement centres, fire departments, and ambulance dispatchers that use telephone and radio communications to ensure rapid delivery of service. Voice logging is necessary and often mandated in this environment as it facilitates the restructuring of events and procedural actions taken, as well as serving as a monitoring and training tool. The public safety segment is highly fragmented, with numerous small agencies such as local fire departments with little national integration in equipment procurement. Therefore, successful penetration of the public safety market requires a wide distribution network with an extensive technical support workforce. The only company that has this type of organisation is Dictaphone, which continues to enjoy a very large market share in this segment. Indeed, Dictaphone's Freedom product is very suitable for the public safety segment, because Freedom can scale down to record small numbers of agents.

**Figure 7. Revenues and Market Share, ATC, Government and Other Segment, 1999-01E  
(US Dollars in Millions)**

Vendor	1999 Revenues	1999 Mkt Share	2000E Revenues	2001E Mkt Share	2001E Revenues	2001E Mkt Share
ASC	11.00	4%	10.60	3%	12.30	3%
Comverse	47.20	19%	60.00	20%	80.00	22%
Dictaphone	56.84	22%	65.78	22%	71.18	19%
Eyretel	10.25	4%	11.00	4%	14.60	4%
NICE	15.31	6%	19.10	6%	27.89	8%
Racal	41.60	16%	51.80	17%	62.20	17%
TEAC	22.50	9%	24.75	8%	27.23	7%
Others	50.00	20%	60.00	20%	70.00	19%
TOTAL	254.70		303.03		365.39	

Source: Company reports and Salomon Smith Barney.

... and the government  
segment was worth  
US\$115 million in 1999

As can be expected, it is very difficult to get information on the uses of voice logging equipment by governments and by agencies such as the FBI, although it is reasonable to assume that intelligence agencies require sophisticated voice logging equipment for various applications. We estimate that this sector represents a US\$115 million market, with lumpy orders awarded based on budget appropriations. We believe that CMVT is the leader in the government segment, even though it is phasing out sales to the military sub-segment. We believe, however, that CMVT will maintain its leadership in sales to the general government segment because Lucent and Ericsson's logging equipment sold to government agencies (such as the FBI) are shipped with CMVT's switches. Sales in this segment should benefit from the 1994 passage of the Digital Wiretapping Law, which empowers government agencies to wiretap phone lines.

## Product Developments

With the new emphasis on service, the industry has been focused on developing quality management products that improve contact centre agent performance and build customer loyalty. At the same time, the industry has been looking for new ways to handle customer transactions and win new customers through CRM integration.

*Recording and monitoring multimedia customer interactions is a natural extension of CRM*

CRM solutions, which are usually associated with database software, are aimed at documenting the customer's interaction history and experience, preferences, and patterns. The goal of CRM is to better understand the customer and provide the intelligence required for more effective strategies aimed at customer retention. A natural extension of CRM documentation is the actual recording of customer interactions utilising sophisticated multimedia contact recording and quality monitoring solutions. Voice recording will, therefore, add a new dimension to CRM that will not necessarily require intermediation by the customer service agent.

With the specialisation of the recording industry, recording solutions are becoming more complex. Suppliers are turning from the hardware side of the business to develop new and integrated software that is being demanded by customers in the marketplace.

### Evolution of the recording market

Recording technology originally evolved from government security systems. The early markets for private use were entities that needed to store and record mixed media. These early markets, such as public safety, air traffic control, and other government sub-sectors, as well as finance, are now mature. We believe that these mature markets will continue to serve as a foundation of consistent earnings flow for expansion into the wider contact centre segment.

### Customer contact centre is the focus of the recording industry

With the increasing use of fax and e-mail, as well as web-based transactions, the call centres are becoming multimedia customer contact centres that utilise recording technology for a variety of uses, including monitoring service quality, training and coaching, data entry verification, and dispute resolution in all types of formats or media content.

*Contact centres are enjoying very rapid growth*

The customer contact segment is attractive because call centres themselves are enjoying rapid growth. This growth is being fuelled by the advent of web-based and other remote-oriented transactions. These businesses require a bank of people in a call centre to handle customer inquiries, complaints, or requests, and they are one of the major reasons why Ovum estimates that the number of call centre seats worldwide will increase to 8.87 million by 2002 from 530,000 in 1996.

Historically, strict contact centre products specialised in recording customer interactions, while quality assurance firms focused on products that enabled managers to focus on qualitative and quantitative improvements in their overall business models. Such quality assurance products accomplished this by:

- 1 Analysing metrics such as average hold time, abandonment rates, or cost per agent.

2 Managing customer transactions and monitoring agents in a more qualitative fashion by understanding cradle-to-grave customer transactions.

*Contact centres  
are demanding  
more sophisticated  
logging and quality  
monitoring tools*

Metric-oriented solutions have traditionally been offered by workforce management suppliers, such as Aspect, IEX, Pipkins, and Blue Pumpkin. Solutions to monitor and train agents have involved recording and playback instruments. However, call centres are now demanding more than simple logging or recording solutions and are moving into total quality assurance and CRM solutions. They realise that quality of service is the most important differentiating factor with respect to their competitors.

Quality assurance solutions help improve such service by enabling call centres to selectively monitor, record, and review voice interaction between a call centre agent and customers even as the call moves through different departments within the contact centre. The interaction can be used for training, analysis of call flow, and monitoring. CRM-integrated solutions go one step further by completing the view of the customer. This enables the contact centre to improve the customer experience and empower the entire enterprise with a thorough knowledge of the customer. The integration of recording and quality assurance solutions that interface with CRM products is the natural progression for the industry.

One of the critical paths of integrating recording products into CRM applications is the identification and capture of crucial calls. These are calls that do not fit a certain pattern, calls where the caller mentions key words or phrases, or calls where the caller displays a high level of stress or confusion in his voice. For digital logging companies to win in the CRM game, they must be able to put content into context and turn the vast amount of voice information that they record into valuable business intelligence. In this arena, robust rules-based recording applications with data-mining components and, to some extent, powerful speech recognition modules will differentiate the winners.

*e-Talk and Witness have  
led on the technology  
front ...*

e-Talk and Witness, because of their backgrounds in quality assurance, have the early start in the pure call centre quality monitoring market. Also, they have improved their call centre solution suite by offering performance management and application integration features.

*... but the traditional  
logging companies are  
catching up*

We expect the traditional logging companies — NICE, CMVT, Racal, Eyretel and Dictaphone — to continue to chase e-Talk and Witness on the technology front in 2000, and continue to add total integration features. Indeed, in February 2000, CMVT launched its Customer Xperience Suite, which captures multimedia interaction, performs quality monitoring, data mining, and CRM integration on a single platform. NICE followed with its CEM platform in June 2000, which, based on an aggressive acquisition programme, also offers quality monitoring, data mining, and CRM integration on a single platform. Eyretel's integrated product, based on internally developed software technologies, was introduced in late 1998, and offers recording and screen and data synchronisation on a single platform. The underlying current is that the industry is embracing customer interaction management as a vehicle for future growth.

**Emphasis on software**

This innovation is the result of increasing emphasis on software development. Datamonitor estimates that twice as many industry engineers are producing software than was the case two years back. In the past, incumbent vendors have held market share because of barriers to entry by smaller firms. Fixed costs associated with manufacturing hardware and unsustainable advantage in storage space made the industry sluggish and unwilling to change. Larger hardware vendors were able to control legal mandates, price, and performance improvements through unified new feature releases, and distribution agreements with switch vendors and specialists, who represented the largest market share.

*Industry focus is on product development rather than hardware*

However, the focus on specialisation and the call centre space has led to emphasis being placed on product development. Hardware components have become a commodity and they now face competition with proprietary recording solutions. New products now offer total solution packages, development of applications, and improved technology further down the market to the consumer level.

**New product developments**

*Offering comprehensive recording and monitoring and analytical solutions is the trend*

Traditional data logging companies are blurring the line between recording and quality management systems. They have been developing integrated solutions that offer quality management and also interface with CRM applications. Such integrated solutions obviate the need for clients to purchase distinct recording and quality monitoring systems, and also give enterprises the power to include voice in their CRM 'box'. This opens new possibilities for customer care and management, as well as agent training. CMVT, NICE, and Eyretel have introduced their integrated platforms, and we expect Racal and Dictaphone to follow suit. We expect WITS and e-Talk, the pure quality assurance players, to continue developing innovative software products, and continue to align themselves with the CRM market. Below are some of the new products and product integration announcements that we feel are the most significant and result from the demand for total call centre management solutions.

**ASC Telecom AG**

ASC is a German-based data recording company, and Datamonitor estimates that it is the leader in the German recording market. While its traditional strengths have been in the financial institutions and public safety segments in Germany and Europe, the company has been making moves to better position itself as a global player in the growing contact centre segment.

*ASC is the leader in the German market, and is making a push into the contact centre segment*

In January 2000, ASC released Inspiration, its quality monitoring product. Inspiration is a fully integrated, windows-based agent evaluation and training system designed for small to medium-sized call centres. It provides rules-based selective recording and evaluation tools, as well as recording on demand. The product, which scales up to 400 seats (and down to 10) is aimed squarely at the small to medium-sized call centre market.

**Comverse Technology (CMVT)**

On 9 February 2000, CMVT introduced 'e-Cording', a multimedia capture technology that enables contact centres to record and monitor web interactions with their customers. The new application allows contact centres to monitor and analyse e-commerce interaction. Another important feature is e-Coding's ability to capture VoIP data. It is CMVT's answer to multimedia monitoring in an industry that is demanding applications that can integrate all types of communication from voice to fax to web-based transactions.

*CMVT introduced a unified recording, quality monitoring, and data and voice-mining tool in February 2000*

Also on 9 February 2000, CMVT introduced the Customer XPerience Suite (CXS), a set of applications that offer multimedia recording and quality monitoring. CXS runs on CMVT's flagship ULTRA recording solution that runs multiple multimedia contact centre applications on a single platform.

CMVT also has introduced its answer to the demand for CRM integration.

'The Intelligent Recording System' is aimed at relaying the 'customer experience' into the CRM solution used by the call centre. It uses a sophisticated rules table to determine which calls to record on a set of criteria using CTI or API integration. After the customer's voice is recorded, it is converted to a non-proprietary standard file format that can be stored in the CRM software or link-embedded in the CRM record to a standard server, for enterprise-wide distribution.

Other key aspects of the new product are speech recognition and data-mining components. Speech recognition can go as far as measuring the emotion of a caller, to converting speech to text, while the data-mining component can search for key words and phrases, or calls displaying a certain amount of emotion.

**Dictaphone Corp (unit of Lernout & Hauspie Speech Products)**

Dictaphone Corporation announced on 24 January 2000 that it will begin to include built-in evaluation forms and reports with its recently introduced Freedom recording system for contact centres. The forms and reports are used to track performance over time, develop and monitor trends, and maintain consistency in evaluating agents.

*Dictaphone introduced a quality monitoring recording system ...*

Freedom, introduced in September 1999, is an open-access 'network appliance' quality monitoring and recording system. It consists of three components: a telecom module, a recording module, and an archive/playback station. Freedom's design and standard audio file format make voice files accessible over any LAN/WAN, the Internet, or the Intranet, using any multimedia PC.

*... and bundled data mining into its da Vinci recording systems*

On 24 January 2000, Dictaphone also announced that it would bundle a data-mining program, 3-dV, with its da Vinci recording systems. The da Vinci system is a quality monitoring system that tracks and evaluates the customer's complete experience, even in cases where the call is transferred several times. The 3-dV programme identifies patterns and correlations in calls and agent performance to help uncover hidden problems. The bundled product is currently being beta tested.

**e-Talk (formerly Teknekron Infoswitch)**

e-Talk is the market leader in the pure quality monitoring segment, with 60% of the segment's share according to Frost and Sullivan. Its e-Talk Performance System includes modules for selective recording, productivity evaluating, and surveying (including web-surveying) modules.

*e-Talk has undertaken an ASP initiative — we believe it is the first in the industry to do so*

Recently, the company has undertaken an ASP initiative. As envisioned, e-Talk's ASP product, which was announced in January 2000, can integrate into any e-business website that allows voice and data communications and allow visitors to click a button on the site and communicate through their PC's microphones and speakers with customer service agents. The ASP model would obviate the need for customers to invest in hardware and software in exchange for a service fee.

#### **Eyretel plc (EYR.L)**

Eyretel is developing products with a focus on the call centre market, and is targeted specifically at supporting the CRM activities of multimedia contact centres.

On 1 February 2000, the company launched a series of products that support its MediaStore recording platform.

*Eyretel's Replay Studio is a call and screen activity visualisation tool . . .*

Replay Studio is a call and screen activity analysis product that visualises patterns within customer interactions, and helps identify unusual calls. Replay Studio can graphically display both voice and screen activity for selected calls.

*. . . and QualitySelect is an agent evaluation product*

QualitySelect is a quality monitoring application that selectively records customer interactions based on pre-defined business rules, and provides a range of analysis tools to review the quality of the customer interaction.

#### **NICE Systems (NICE)**

During 1999, NICE put new focus on quality monitoring and CRM integration. In February 1999, it introduced NICE Universe 4.1, its quality management solution offering selective recording, screen capture, and quality monitoring tools.

In October 1999, NICE launched NiceUniverse LIVE, NICE's first software-driven quality monitoring solution for contact centres of all sizes. The product is actually billed as an affordable solution for small to medium-sized contact centres.

In November of 1999, NICE announced that it was acquiring STS Software Systems, a developer of complete digital logging solutions. The acquisition was technology driven, since STS had developed a method to record information from the Internet with an advanced VoIP interface. On 7 March 2000, NICE unveiled its VoIP recording technology, which is based on technology acquired from STS. The technology is integrated within NICE's product line.

*NICE's CEM platform is a comprehensive multimedia recording, quality monitoring, and surveying solution with CRM integration tools*

NICE unveiled its strategies on 25 January 2000, for integrating its digital recording and quality management solutions with CRM products. NICE has developed relationships with Siebel, Lucent, and Clarify among other CRM industry leaders, and introduced a host of new quality monitoring products. We expect that NICE will extend and fortify its relationships with CRM vendors in the coming year.

On 13 June 2000, NICE unveiled its new Customer Experience Management (CEM) platform — a comprehensive multimedia recording and quality monitoring solution. Building on its acquisition and development activity of the past year, the new platform offers multimedia recording, quality monitoring, data mining, surveying, and CRM integration tools. We believe NICE's initiative validates the trend in the industry for actualising the convergence of multimedia recording, quality monitoring, and CRM integration on a single platform.

*Racal introduced Renaissance, new product architecture*

#### **Racal Recorders (unit of Thomson-CSF)**

Racal unveiled Renaissance, its new product architecture for delivering multimedia recording and analysis applications in 1999. Its products are constructed using component-based software technologies, include a new enterprise class recording server (Tienna), a scalable mass-storage system (CMSU), and a high-performance, distributed replay capability. We believe that Racal has already deployed Renaissance to several financial institutions — one of its traditional areas of strength — and is aggressively pursuing the broad contact centre segment.

We also expect Racal to pursue the contact centre segment with the second release of its Agent Quality Management (AQM) product that will offer rules-based recording and advanced agent free-seating. The release is expected in 2H00.

#### **Witness Systems (WITS)**

In July 1999, WITS unveiled eQuality Analysis, a solution that allows contact centre management teams to combine, assess, and explore data from disparate sources throughout the enterprise, including workforce automation, predictive dialler, and CRM technologies.

*WITS' eQuality was designed specifically to address Internet-based customer interactions*

In December 1999, WITS announced new multimedia recording capabilities for the call centre market. The eQuality suite enables call centres to selectively record, evaluate, and analyse customer interactions based on user-defined business criteria, such as key customers, specific customer service representatives. The product, which includes eQuality Call, eQuality Interactive, eQuality Response, and eQuality Evaluation, records voice interaction, as well as corresponding desktop activities by the contact centre agent, such as data entry, screen navigation, and data retrieval. However, the platform was designed specifically to address the growing number of interactions contact centres receive through the Internet, such as e-mail and web-chat. Customer interactions can then be synchronised with desktop activity for analysing complete customer interaction.

#### **Outlook**

With the emergence of new media, and the importance that customer care and service at the call centre level has attained, we expect continued innovation both in new product developments and service offerings.

*Serving the web-enabled contact centre will be the industry's next task*

Firms in the industry have been preparing to meet this surge in demand by acquiring new technological know-how and CRM integration partners. On the technology front, preparing for the web-enabled contact centre is an important area of focus. A Yankee Group survey found that nearly 75% of fortune 1000 companies plan an active commitment to web support by 4Q01. Such web-interaction may take the form of a self-service knowledge base, e-mail response icon, real-time request using VoIP, or a web-chat request. The biggest challenge on this front, however, will be integrating these new technologies with legacy systems. To ease the legacy systems pain, and meet new demands, we expect firms in the industry to offer rich, integrated solutions that provide more than just one piece of the puzzle.

We believe the emerging CEM platform will be just such a solution.

Digital Logging and Quality Assurance Industry – 5 July 2000

**Figure 8. Products for Contact Centre Market, by Companies**

Product Line	Description	Features
<b>ASC</b>		
Marathon	Suite of voice recording systems — Marathon Pro, Marathon Advanced, and Marathon Compact	Up to 128 recording channels, but can also be networked via LAN or WAN Recording capacity of up to 10,000 channel hours with DDS 4 DAT cassettes Open architecture and open software interface allows for integration with third-party software vendors Instant recall terminal, a remote controlled application that allows quick access to recorded conversations Marathon Compact is housed in a PC tower with recording capacity of 6,600 channel hours
Inspiration	Fully integrated, windows-based agent evaluation and training system	Selective recording system and quality evaluation tool designed with open system standards
<b>Comverse</b>		
Customer Xperience Suite	Suite of Integrated applications that capture and analyse multimedia interactions	Single platform utilising e-Coding, Intelligent Recording System, and e-Motion Analysis to provide a comprehensive contact centre solution
e-Cording	Provides sophisticated multimedia capture technology for web-based monitoring	Monitors all e-commerce interactions including web page navigation, collaboration, and e-mail Can monitor VoIP data
Intelligent Recording System	Provides for the customer experience to be integrated into the CRM solution	Allows selected individuals in the enterprise access to the information
e-Motion Analysis	Measures the stress level of customer and agent	Converts customer experience to standard file format Sophisticated rules table sets criteria for which calls are recorded Determines areas where agents can be trained, improving CRM and quality management areas of the call centre
UltraNet	Provides enterprise-wide recording and quality monitoring for call centres on a single media/recording platform	Utilises a powerful and unique HSM (hierarchical storage management) system that enables businesses to record any or all of three formats (hard drive, optical disk, and digital audio tape) CTready and integrated with all leading PBXs and ACDs Fulltime and on demand recording Recording for Internet Call Centres, as well as LAN and LAN/Wanbased recording Rules-based recording for intelligent recording of targeted calls IP ready, enabling the recording of VoIP
Mentor	Provides call-centre quality monitoring through real time simultaneous screen capture and CTI-enabled voice recording	Flexible channel allocation to capture on demand recording without dedicating a channel to each agent The system records by event, time, call count and on demand. Optional screen recording. Designed for small to medium-sized enterprises, Mentor is scalable to 1,600 agents Multiple supervisors can review and score recordings from any LAN/WAN workstation User definable scoring system Utilises all the same features of UltraNet Used in a small node of a larger data recording network Can simultaneously monitor up to 80 agents, recording both voice and screen
SafeNet	Provides quality digital recording on a smaller scale	
Words and Pictures	Plug-and-play quality monitoring tool for smaller scale enterprises	
<b>Dictaphone</b>		
Symphony CTI	A CTI advanced communications management system Stored in a centralised call-records database, call details used to quickly locate and verify phone transactions	Customised selective recording solutions The Advanced Call Retrieval System (ACRS) feature can integrate with the most popular PBXs and ACDs through a real-time or SMDR link to capture information related to each call Free seating (ability for remote access) Supports LAN/WAN configuration Simultaneous, multi-user access Windows or Windows NT Interface

**Figure 8. Products for Contact Centre Market, by Companies (Cont'd)**

Product Line	Description	Features
Freedom	Open access network-appliance quality monitoring and recording system	Accessible over any LAN/WAN, Internet or Intranet, using any multimedia PC Component architecture is scalable Modular architecture allows users to custom design their system Designed for small to medium-sized contact centres
da Vinci QMS	Quality monitoring system with synchronised voice and data screen recording	Managers identify key types of calls for review as opposed to a random approach (Calls transferred repeatedly, largest customers or calls handled by the newest agents) Full reporting and user definable scoring system Web-based accessibility The client's call centre can also be benchmarked against other call centres for evaluation purposes The system is based on Windows NT and Oracle software 3dV, a data-mining component, is embedded in the product. Searches for unusual patterns in agent and customer data
ProLog/Guardian	Serves mid-sized customers; provides logging capabilities to customers requiring fewer recording channels and features.	
Sentinel	Digital logger is designed for the smaller capacity and price sensitive customers	
<b>Eyretel</b>		
MediaStore	Eyretel's core recording platform. Second-generation enterprise-wide logging product stemming from E1000	CTIready and integration with major PBX, ACD and CTI systems Use of PCI data transfer technology for high speed, high volume recording, handling 128 channels Continuous or selective recording Free seating (ability for remote access) Open standards architecture that is Windows and Windows NT compatible Screen Capture software allows recording of multiple graphical PC displays of Internet-based communications
Unify	Middleware that allows MediaStore to be integrated with third-party software	Used to 'tag' call records with relevant business data, such as customer number Allows for integration for CRM products Enables control of recording by agent (can pause recording when requested by customer)
Replay Studio	Advanced customer contact visualisation software tool for the MediaStore platform	Graphically displays both voice and agent's screen activity for selected calls Allows for visual identification of unusual calls or patterns
E. Ware	Networked solution for the logging environment designed to facilitate replay and monitoring of calls through access to a central database	Recording provides customer ID, date, time, channel, duration, dialed number, and transaction details Recorders and parameters configured via LAN or WAN Instant replay of last call Open industry standards
QualityCall	Quality monitoring system with synchronised voice and data screen recording	Operates on standard PCs in Windows or Windows NT environment Allows targeting of calls through profiling and CTI-derived call description Parameters include: agent identity, call type, agent group, customer account number, claims number Full reporting and graph functions covering agent performance over time Benchmark calls are available online for instant replay

**Figure 8. Products for Contact Centre Market, by Companies (Cont'd)****NICE**

Nice CEM	Fully integrated, comprehensive solution for multimedia contact centres	Records voice, email, and Web-based interactions,  Offers quality monitoring tools, data mining, client surveying, CRM integration toolkit, and remote recordings on the same platform Controlled, accessed and maintained locally via LAN, or remotely via WAN, modem, and via an Interactive Voice Response (IVR) interface CTIready and integration with leading ACD, PBX and CTI components Multiuser, multioperational system
NiceLog	CTI voice logging system, providing continuous, digital recording and archiving of telephone conversations	Instant playback of selected call recordings remotely, via phone extension or speaker; locally via Voice over LAN
NiceCLS	A call logging system that records all incoming and outgoing call data in a comprehensive database	Integration with major ACDs and servers Supports freeseating Enables Dynamic Selective Recording Provides Recording On Demand LAN/WAN connectivity
NiceCall	Compact digital voice logger for smaller sites requiring fewer channels	Last 120 hours of recorded audio are maintained on hard disk for fast and easy retrieval of audio Accesses up to 1,000 hours of prerecorded data Logs 824 channels Remote access capability via LAN, WAN or modem
NiceUniverse	Quality assurance system with full synchronisation of voice and screen capture	Online evaluation tools to simultaneously enter scores in to online forms and survey templates Stored in a compressed digital format Replay of voice and screen session from any workstation on the LAN VoiceoverIP enabled Comprehensive screen capture, reporting capabilities, and online forms for agent assessment
NiceUniverse LIVE	100% software driven quality assurance system	Designed for small to medium-sized call centres. CTI and switch independent Voice and data recording capabilities can be added at any time since the product is built on the NICE platform

**Racal**

Wordnet Series 2	Offers a total CTI recording solution.	Provides open architecture Local and remote accessibility via the LAN System supports many replay sessions, incorporates flexible search and replay architectures into the communications infrastructure Offering up to 3,960 channel hours of recording and 20,000 channel hours for archiving
Mirra Series 2	Recording platform for smaller contact centres	DVD RAM optical disk media used for storage Up to 32 channels and 1300 hours of unattended recording per unit
Agent Quality Management	Scalable assessment and evaluation solution	Integrated reporting providing statistical information on quality and Assessment and evaluation of calls with integrated replay Creates management reports analysing performance and measuring trends Can be a stand alone or installed on LAN Rulesbased recording that fully supports agent freeseating

**Witness**

Equality	Enterprise-wide quality monitoring system with synchronised voice and data screen recording	Links to a Switch Interface Unit (SIU) and facilitates 'intelligent' monitoring, which includes random monitoring, monitoring in freeseating environments and agent tracking User activity report assesses the productivity of the supervisors Captures customer interaction across multiple media including telephone, Webchat, and e-mail Monitoring activity is summarised using the software's customised form generator and graph builder systems Aftercall work timer gives call centre managers a more complete picture of follow up to customer interactions Operates on Windows NT platform and integrates with third-party software
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Sources: Company reports and Salomon Smith Barney.

## Business Developments

*The contact centre has been identified as the largest target market opportunity*

Recent trends in business development also focus on the enterprise call centre or customer contact centre. The customer contact centre has been identified as the largest target market opportunity. It represents the sweet spot for the recording industry and has drawn the most outside investment to back the best-positioned industry players. Additional capital from outside investment will help vendors capture this mass market.

### Recent announcements

As discussed above, with the increasing focus on the call centre market, recording industry players are seeking out opportunities to establish market presence by signing agreements and marketing alliances with enterprise network solution and telecommunications service providers, as well as major CRM providers. Below are some of the strategic alliances and distribution agreements that we feel will have the most impact on the industry.

#### ASC Telecom AG

Figure 9. ASC Telecom AG — Sales, 1999-01E (US Dollars in Millions)

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	5.00	7.00	40%	10.40	49%
Financial Institutions	9.00	8.70	-3%	9.30	7%
Air-Traffic Control, Gov't, Public Safety, Other	11.00	10.60	-4%	12.30	16%
Total	25.00	26.30	5%	32.00	22%

Sources: Company reports and Salomon Smith Barney.

*ASC acquired Kreutler, its primary competitor in Germany, to broaden its offerings and reach*

In May 1999, ASC announced that it was acquiring Kreutler GmbH, a German data-logging firm. In addition to being a primary competitor in Germany, Kreutler has operations in France, Belgium, and Switzerland, and has developed interactive voice processing for call centres. The acquisition broadened ASC's product line and customer base.

ASC has partnerships and alliances in place with, among others, Lucent, Ericsson, Nortel, and Philips, and has initiated a strong push into the US market. The company has opened an office in New York, and views the US as the most strategically important market to penetrate.

#### Comverse Technology (CMVT)

Figure 10. Comverse Technology — Sales, 1999-01E (US Dollars in Millions)

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	30.00	40.00	33%	50.00	25%
Financial Institutions	0.80		-100%		
Air-Traffic Control, Gov't, Public Safety, Other	47.20	60.00	27%	80.00	33%
Total	78.00	100.00	28%	130.00	30%

Sources: Company reports and Salomon Smith Barney.

CMVT made several announcements in 4Q99 and the beginning of 2000, which we view as strategic agreements to increase its exposure in the call centre market.

CMVT signed a distribution agreement in November 1999 with Williams Communications Solutions, the largest independent provider of enterprise network solutions in North America. It is expected that CMVT's technologies will complement the call centre offering of Williams by adding call logging and quality assurance features to the current product portfolio.

*CMVT entered into an alliance with Genesys...*

CMVT also announced a co-marketing alliance and technological partnership with Genesys Telecommunications Laboratories, the leading provider of Enterprise Interaction Management solutions. The alliance will focus on promoting the integration of ULTRA, CMVT's Intelligent Recording platform and the Genesys T-Server to provide a total quality assurance solution for customers in the Asia Pacific region.

*... signed distribution deals with Sonic Mexicana and Teloquent...*

In January 2000, CMVT announced two distribution agreements with Sonic Mexicana and Teloquent. Sonic, a Mexican provider of electronic security and communications products, will be offering CMVT's recording and quality monitoring products to call centres and other organisations within the Mexican Republic. Teloquent will be offering recording and monitoring solutions from CMVT as part of its call centre solutions for enterprise, branch office, and work-at-home environments. By offering a comprehensive call centre management platform with CMVT solutions, Teloquent will enhance the quality of communication and service between the contact centre and the customer, whether it is via the telephone or the web.

*... is phasing out sales to the military while increasing sales to telco operators...*

In addition to the agreements, we believe that CMVT is making strategic shifts in the segments it serves. CMVT has been phasing out sales of its recording and monitoring products to the military for some time. In its place, CMVT has been increasing its sales to telecommunications operators for monitoring public networks and the telecom cloud. Conceptually, telecom operators could then use their monitoring systems to offer recording and monitoring services to individual call centres. The company believes that this can be an emerging growth segment for the recording industry, and did generate approximately US\$10 million in revenues for CMVT during 1999. CMVT expects that figure to double in 2000.

*... and signed alliance agreements with several CRM application vendors*

CMVT is a Siebel Premier Partner, and has entered into alliances with, among others, Clarify and Cisco. CMVT is also a preferred vendor for Nortel's contact centre solutions.

#### **Dictaphone Corp (unit of Lernout & Hauspie Speech Products)**

**Figure 11. Dictaphone Corp — Sales, 1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	20.00	20.00	0%	30.00	50%
Financial Institutions	21.35	24.20	13%	25.30	5%
Air-Traffic Control, Gov't, Public Safety, Other	56.84	65.78	16%	71.18	8%
Total	98.19	109.98	12%	126.48	15%

Sources: Company reports and Salomon Smith Barney.

In November 1999, Dictaphone announced it had signed a contract with GTE Directories, Inc, to provide advanced digital recording systems for GTE Directories 26 US call centres. The ProLog systems will be used to record and archive voice conversations in GTE's directories across the country.

In January 2000, Dictaphone said it had reached an agreement with Communico Ltd, a customer service consulting firm, on a marketing and development relationship between the two companies.

Elements of the agreement include: establishing joint account management teams, co-marketing activities and cross-compensation, sharing of sales leads and training programmes, and new product development. The two companies also have plans to develop a new customer experience evaluation form for users of Dictaphone's da Vinci quality monitoring system. The new form will let managers review and analyse their customers' total experience, using measurements adapted to a specific profile of the customer. These key measurements include: correct routing, number of transfers and hold times, and if the purpose of the call was accomplished.

*Dictaphone's acquisition by LHSP should give Dictaphone technological access to building voice recognition and voice mining tools*

In May 2000, Lernout & Hauspie (LHSP) completed its acquisition of Dictaphone. Lernout & Hauspie produces speech recognition, dictation, and translation products. Dictaphone expects technological synergies that will enable its products to, among other things, perform data mining and key-word searching in recorded audio content.

#### **e-Talk (formerly Teknekron Infoswitch)**

**Figure 12. e-Talk — Sales, 1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	45.00	60.75	35%	80.49	32%

Sources: Company reports and Salomon Smith Barney.

Teknekron Infoswitch officially changed its name to e-Talk on 24 January 2000. The new name expresses e-Talk's strategic commitment to the evolution of call centres to multimedia customer contact centres.

On 24 January 2000, e-Talk also unveiled its vision for where that evolution will lead. It announced that it is repositioning itself as a full-service Internet telephony application service provider (ASP) that allows e-businesses to talk and interact with their customers online.

*e-Talk is performing significant r&d in VoIP*

e-Talk has also engaged in significant research and development to deliver higher quality VoIP.

On the CRM integration front, e-Talk has had alliances in place with Cisco, Rockwell, and Lucent for some time, and expects to achieve Siebel validation in 3Q00.

**Eyretel plc (EYR.L)****Figure 13. Eyretel plc — Sales ,1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centers and Quality Assurance	21.50	30.25	41%	40.15	33%
Financial Institutions	10.25	13.75	34%	18.25	33%
Air-Traffic Control, Gov't, Public Safety, Other	10.25	11.00	7%	14.60	33%
Total	42.00	55.00	31%	73.00	33%

Sources: Company reports and Salomon Smith Barney.

Eyretel provides multimedia recording and analysis solutions that enable contact centres to record all customer communications. Eyretel also develops search and call visualisation tools that allow for graphical presentation of unusual calls or patterns, and enables the selection of recordings for detailed analysis.

Strategically, Eyretel has been shifting its focus on providing recording and analysis solutions (software) rather than pure compliance recording products (hardware). The company is aggressively pursuing the call centre market, and is looking to expand its marketing and sales presence in the US.

*Eyretel signed a three-year deal with British Telecom ...*

In December 1999, Eyretel entered into a three-year contract with British Telecom (BTY) under which its call and contact centre products and services are to be offered as part of British Telecom's call centre solutions.

*... and has become a Cisco Technology Partner*

In February 2000, Eyretel became a Cisco (CSCO) CCBU Technology Partner, and is working with Cisco on projects to provide recording of Cisco's call centre and VoIP product lines. Cisco also has a significant investment in the company.

Eyretel has also entered into alliances with Siebel, Davox, and Quintox on the CRM front.

Eyretel began trading on the London Stock Exchange on 14 April 2000.

**NICE Systems (NICE)****Figure 14. NICE Systems — Sales ,1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	64.62	80.50	25%	113.30	41%
Financial Institutions	35.21	36.84	5%	33.12	-10%
Air-Traffic Control, Gov't, Public Safety, Other	15.31	19.10	25%	27.89	46%
Total	115.14	136.44	18%	174.30	28%

Sources: Company reports and Salomon Smith Barney.

NICE has been increasing its focus on the quality monitoring segment. In the last three-quarters of 1999, NICE tripled its high-margin quality monitoring revenues in the US, indicating significant traction for NICE in that segment. Also, NICE has been moving quickly to form alliances with key CRM vendors with whom it will integrate its solutions.

*NICE became a Siebel  
Premier Partner  
in January 2000 ...*

With the implementation of an integrated solution strategy, NICE announced on 25 January 2000, that it has joined the Siebel Alliance Program as a Siebel Premier Software Partner. All forms of customer interactions will be captured by NICE, including web collaboration, e-mail, and Internet chat. These interactions will be recorded, linked to the CRM event, and enable the organisation to playback the process for specific events. Contact centre calls can also be recorded, whether initiated by the customer service agent or according to specific parameters.

*... extended its  
strategic partnership  
with Genesys ...*

On 26 January 2000, NICE announced that it will extend its strategic partnership with Genesys. NICE will integrate its solutions with Genesys Telecommunications Laboratories and its Genesys Internet Suite to monitor all customer interactions in the contact centre, including voice, text, chat, e-mail, VoIP, and web collaboration.

We feel that this is a strategically important alliance with Genesys for two reasons. First, the NICE solution suite will be fully compatible with the Genesys Internet Suite. Second, Genesys and its leading presence in the Internet customer contact centre space will enable NICE to enter new customer markets in the Internet and e-commerce area. While there will be some crossover with current customers, NICE will be able to introduce its products to a rapidly expanding area of customer contact centres.

*... acquired CenterPoint  
Solutions*

On 23 February 2000, NICE announced that it signed a definitive agreement to acquire CenterPoint Solutions, an application developer of web-enabled solutions for statistical tracking, digital recording, and automated customer surveys for contact centres. CenterPoint products gather statistics such as transfers, call durations, hold times and agent ID's. We believe that this acquisition extends NICE's ability to deliver next-generation quality monitoring products and data-mining functionality.

*... made a minority  
Investment in  
CustomerSat.com ...*

On 13 June 2000, NICE announced that it had entered into a strategic alliance with, and made a minority investment in, CustomerSat.com, a provider of online customer satisfaction measurement and reporting services. CustomerSat.com's Web Survey Services will be integrated into NICE's CEM platform, and provide the vehicle for online customer surveying.

*... and announced key  
CRM Integration partners*

On 13 June 2000, NICE announced new alliances and integration agreements with Siebel's eBusiness applications, Nortel's Clarify eBusiness applications, Cisco's Customer Interaction Suite, Kana's integrated e-business applications, and eGain's Commerce 2000 platform.

#### **Racal Recorders (unit of Thomson-CSF)**

**Figure 15. Racal Recorders — Sales, 1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	22.40	25.00	12%	35.00	40%
Financial Institutions	16.00	19.20	20%	22.80	19%
Air-Traffic Control, Gov't, Public Safety, Other	41.60	51.80	25%	62.20	20%
Total	80.00	96.00	20%	120.00	25%

Sources: Company reports and Salomon Smith Barney.

Racal Recorders is a leading manufacturer of voice and data recorders. Its traditional strengths have been in the financial institutions, air traffic control, and public safety segments. However, Racal has been putting more focus on the call centre segment over the last two years. We estimate that between 1998 and 1999, the percentage of revenues Racal derived from call centres has increased by almost 50% from 19% of revenues to 28%. We believe that Racal is especially targeting the small to medium-sized call centres, as evidenced by their new product releases and Hewlett-Packard announcement. Geographically, Racal is strongest in the European call centre market, and is making efforts to establish a stronger presence in the US market.

*Racal announced integration with Hewlett Packard BCS platform ...*

On 14 December 1999, Racal announced that its Agent Quality Management (AQM) and Customer Transaction Management (CTM) software products were compatible with the Hewlett Packard BCS platform. The AQM product was introduced as targeted to small, growing call centres that do not support full CTI functionality. It offers rules-based selective recording, produces reports, and highlights trends. The HP platform is a converged telephony solution for small to medium-size businesses.

*... and that it received global certification from Lucent for Lucent's Definity product*

Racal has recently received global certification from Lucent for inter-working with Lucent's Definity product. The certification has helped Racal's sales in the US market, and has been especially helpful in the South American market. Racal has also entered into alliance/integration agreements with Nortel Networks, Siemens, and Cisco (CSCO).

We believe that strategically, Racal will pursue the small to medium-sized call centre market, while building on its strong positions in the financial institutions and public safety segments through its newest product offering, Renaissance.

On 16 June 2000, Thomson-CSF completed its acquisition of Racal's parent company, Racal Electronics, Plc. Thomson-CSF is an international electronics and communications firm.

#### **Witness Systems (WITS)**

**Figure 16. Witness Systems — Sales, 1999-01E (US Dollars in Millions)**

	1999	2000E	% Growth	2001E	% Growth
Contact Centres and Quality Assurance	23.00	36.80	60%	52.30	42%

Sources: Company reports and Salomon Smith Barney.

Witness Systems provides selective recording and quality monitoring software that enables companies to enhance their customer communication across multiple media. Witness is deployed by call centre managers as a tool to enhance the performance of their agents, thereby improving the overall quality of customer service.

On 23 November 1999, Witness Systems, Inc filed a registration statement for an initial public offering of its common stock. WITS began trading on 10 February 2000.

*WITS announced a partnership with Clarify in January 2000 ...*

On 26 January 2000, Clarify Inc announced a partnership with WITS. The agreement intends to enhance customer interactions across multiple communications media. Witness Systems' eQuality multimedia product suite will be integrated with Clarify eFrontOffice to record, evaluate, and analyse customer contacts. The combined solution will enable organisations to more effectively manage the contact Centre's employees, business processes, and technologies to ensure customer loyalty. Companies can now improve customer service in call centres across all media and will have a method to inspect their vital business processes.

... and its eQuality suite completed Siebel 99 validation in May 2000

In May 2000, WITS announced that its e-Quality software suite had completed Siebel 99 validation through the Siebel Validation Programme. WITS became the first supplier of contact centre recording and quality monitoring software to integrate and complete validation with Siebel Call Centre.

## Outlook

### Capital investment

Capital inflow and investment will accelerate the growth of the sector in 2000

Capital inflow and investment will accelerate the growth of the sector in 2000. WITS went public in February 2000, as did Eyretel in April 2000, and we are aware of other recording companies that are considering entering the public market. Wall Street and leveraged buyout firms are interested in the recording industry based on its mass market potential. This will only enhance the pace of change in the recording industry as more capital is available for reinvestment in technology and product development. Beyond product development, capital will be invested in distribution and services to enhance the offering package of these recording technology companies.

### Distribution

Distribution has been one of the driving forces of the competition in the recording industry. Arrangements have been simple: a company either sold its products directly or indirectly, and few companies were able to mix channel programmes with the direct model. Indirect service programmes were not quite important in the past because solutions were easy to install and relatively simple to manage. Suppliers were able to establish significant market presence by signing a contract with just a single, well-known telecommunications provider in the public domain.

Professional services and support will become more important for distribution, because of the increasing complexity of CEM solutions

Specialisation has changed the entire approach that recording solution providers take today. Current recording solutions are much more complex, requiring more technical expertise during installation and more support after the systems are rolled out. Old distribution models are becoming more dynamic and the trends show vendors are attempting to provide a more balanced and responsive channel programme with special focus on professional services. By improving the channel features to balance direct and indirect business, vendors are more resilient and provide customers with a superior level of service throughout the product lifecycle. It also helps vendors to monitor their business and track new developments in the industry.

### Professional services

With the growing complexity of recording solutions and the increasing focus on the contact centre market, more recording vendors are enhancing the professional services aspect of their business. Large customers are demanding more than just channel support. These customers generally have a large, heterogeneous legacy infrastructure and demand implementation and integration support. Vendors must have a competent professional services team in place to win new customers and gain market share.

## The Emergence of CEM

With the proliferation of e-commerce, the contact centre has gained new importance. Contact centre agents have become the critical touch point for customers, and are, in many cases, the only company representatives that customers will have contact with. Therefore, ensuring that contact centre agents are properly trained and provide the expected level of service has become strategically important for customer retention.

Led by the software development innovation of the quality assurance players, the industry is moving to embrace comprehensive multimedia recording and monitoring solutions that are, in effect, extensions of CRM applications. These comprehensive, customer-focused solutions are emerging as a distinct segment in the industry.

### Bringing customer experience to the fore

We define CEM as a platform that unifies the following:

- Multimedia recording functionality. In the Internet age, customer interactions occur from a variety of channels, which include e-mail, web-chat, web-collaboration, VoIP, and basic voice. The recording platform must capture interactions across all these categories.
- Quality monitoring and training. Agent training is on the rise, and quality monitoring components are an integral part of the process. Quality monitoring products are powerful training tools, and are also important for tracking agents' progress.
- Analytical tools. Data mining enables contact centres to analyse recorded data and find relationships that had previously not been discovered. These tools will become more powerful as the industry develops more powerful speech recognition tools that can perform voice mining. CMVT already has a speech recognition component.
- Surveying customer opinion. Getting direct feedback from customers on their experiences provides valuable business intelligence. By integrating interactive voice response (IVR) surveys and web-surveying technologies, contact centres can collect this vital information when it matters most — during an interaction.
- Knowledge distribution. The collected information will be of no value unless it gets properly distributed throughout the enterprise. This can be accomplished by allowing executives to listen in on interactions (as NICE's platform does), or embedding selective sound files of a customer's interactions into his CRM record (as CMVT's platform does).

We believe that the market will respond well to CEM products for the simple reason that it will provide a multidimensional view of customer interaction, and will take client management to a more sophisticated level. We expect the CEM segment to generate sales of US\$1.1 billion by 2006, yet it is too early to determine which firm(s) will emerge as the industry leader(s).

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**Figure 17. Projected Revenues for CEM Segment, 2000E-06E (US Dollars in Millions)**

	2000E	2001E	2002E	2003E	2004E	2005E	2006E
CEM Segment Revenues	25	55	115	230	460	730	1100

Source: Salomon Smith Barney.

We believe the winners in this space will be firms with a broad base of CRM integration partners, deep professional service teams, and, of course, innovative technologies that can integrate with legacy systems.

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## Financials

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SALOMONSMITHBARNEY

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**Figure 18. NICE Systems — Income Statement, 1997-01E (US Dollars in Millions, Except Per-Share Data)**

	1997A	1998A	1Q99A	2Q99E	3Q99E	4Q99E	1999A	1Q00A	2Q00E	3Q00E	4Q00E	2000E	2001E
<b>Revenues</b>	69.27	90.97	26.50	28.53	31.96	36.60	123.60	37.52	38.00	41.00	44.00	160.52	210.00
<b>Cost of Revenues</b>	30.40	38.74	11.26	12.08	13.44	15.31	52.09	15.67	16.07	17.10	18.33	67.17	88.20
<b>Gross Profit</b>	<b>38.87</b>	<b>52.24</b>	<b>15.24</b>	<b>16.45</b>	<b>18.52</b>	<b>21.30</b>	<b>71.51</b>	<b>21.85</b>	<b>21.93</b>	<b>23.90</b>	<b>25.67</b>	<b>93.36</b>	<b>121.80</b>
Research & Development, Net	7.39	10.75	3.09	3.28	3.67	3.79	13.83	4.72	4.18	4.26	4.40	17.56	22.37
Selling Expenses	16.86	26.70	8.12	8.29	8.48	9.41	34.30	9.74	10.49	10.95	11.00	42.17	55.86
General and Administrative Expenses	4.97	6.73	1.87	1.84	2.03	2.12	7.86	2.56	2.55	2.67	2.77	10.54	12.60
<b>Operating Income</b>	<b>9.65</b>	<b>8.06</b>	<b>2.16</b>	<b>3.04</b>	<b>4.34</b>	<b>5.99</b>	<b>15.53</b>	<b>4.84</b>	<b>4.71</b>	<b>6.03</b>	<b>7.50</b>	<b>23.08</b>	<b>30.98</b>
Financial Income (expense), Net	2.90	5.79	0.99	1.28	1.42	1.13	4.81	1.27	1.50	1.50	1.70	5.97	6.00
Other Income (expenses), Net	0.03	—	(0.01)	—	(0.00)	0.01	(0.00)	0.01	—	—	—	0.01	—
<b>Pre-tax Income</b>	<b>12.57</b>	<b>13.85</b>	<b>3.14</b>	<b>4.32</b>	<b>5.76</b>	<b>7.13</b>	<b>20.34</b>	<b>6.11</b>	<b>6.21</b>	<b>7.53</b>	<b>9.20</b>	<b>29.05</b>	<b>36.98</b>
Taxes on Income	0.12	0.35	0.02	0.01	0.03	0.01	0.07	0.06	0.12	0.05	0.18	0.42	0.50
<b>Income After Taxes on Income</b>	<b>12.45</b>	<b>13.50</b>	<b>3.12</b>	<b>4.31</b>	<b>5.73</b>	<b>7.11</b>	<b>20.26</b>	<b>6.04</b>	<b>6.09</b>	<b>7.47</b>	<b>9.02</b>	<b>28.62</b>	<b>36.48</b>
Equity in Results of Investee Companies, Net	—	—	—	—	—	—	—	—	—	—	—	—	—
Minority Interest	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Income from Continuing Operations</b>	<b>12.45</b>	<b>13.50</b>	<b>3.12</b>	<b>4.31</b>	<b>5.73</b>	<b>7.11</b>	<b>20.26</b>	<b>6.04</b>	<b>6.09</b>	<b>7.47</b>	<b>9.02</b>	<b>28.62</b>	<b>36.48</b>
Discontinued Operations and Other Items	(15.69)	(9.02)	—	—	—	(5.16)	(5.16)	—	—	—	—	—	—
<b>Net Income</b>	<b>(3.23)</b>	<b>4.48</b>	<b>3.12</b>	<b>4.31</b>	<b>5.73</b>	<b>1.95</b>	<b>20.26</b>	<b>6.04</b>	<b>6.09</b>	<b>7.47</b>	<b>9.02</b>	<b>28.62</b>	<b>36.48</b>
EPS from Continuing Operations	1.36	1.21	0.27	0.36	0.46	0.56	1.65	0.44	0.47	0.57	0.68	2.16	2.70
Average Shares Outstanding (000's)	9,130	11,192	11,766	12,058	12,539	12,812	12,251	13,733	13,000	13,050	13,300	13,271	13,500
<b>Margin Analysis</b>													
<b>Gross Profit Margin</b>	<b>56.11%</b>	<b>57.42%</b>	<b>57.50%</b>	<b>57.67%</b>	<b>57.94%</b>	<b>58.19%</b>	<b>57.85%</b>	<b>58.24%</b>	<b>57.70%</b>	<b>58.30%</b>	<b>58.35%</b>	<b>58.16%</b>	<b>58.00%</b>
Research & Development	10.67	11.82	11.66	11.50	11.48	10.34	11.19	12.58	11.00	10.40	10.00	10.94	10.65
Selling Expenses	24.34	29.35	30.65	29.06	26.52	25.69	27.75	25.95	27.60	26.70	25.00	26.27	26.60
General and Administrative Expenses	7.17	7.39	7.04	6.45	6.35	5.79	6.36	6.82	6.70	6.50	6.30	6.57	6.00
<b>Operating Income Margin</b>	<b>13.93</b>	<b>8.86</b>	<b>8.15</b>	<b>10.67</b>	<b>13.59</b>	<b>16.36</b>	<b>12.57</b>	<b>12.89</b>	<b>12.40</b>	<b>14.70</b>	<b>17.05</b>	<b>14.38</b>	<b>14.75</b>
<b>Pretax Margin</b>	<b>18.14</b>	<b>15.22</b>	<b>11.83</b>	<b>15.15</b>	<b>18.01</b>	<b>19.47</b>	<b>16.45</b>	<b>16.28</b>	<b>16.35</b>	<b>18.36</b>	<b>20.91</b>	<b>18.10</b>	<b>17.61</b>
Tax Rate	0.91	2.51	0.54	0.30	0.52	0.20	0.36	1.05	2.00	0.70	2.00	1.46	1.35
<b>Net Income Margin (excl Extraordinary)</b>	<b>17.98</b>	<b>14.84</b>	<b>11.77</b>	<b>15.10</b>	<b>17.91</b>	<b>19.43</b>	<b>16.39</b>	<b>16.11</b>	<b>16.02</b>	<b>18.23</b>	<b>20.50</b>	<b>17.83</b>	<b>17.37</b>

Sources: Company reports and Salomon Smith Barney.

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**Figure 19. Comverse Technology — Income Statement, 1997-02E (US Dollars in Millions, Except Per-Share Data)**

	31 Dec 1996A	31 Dec 1997A	31 Jan 1999A	1Q00A	2Q00A	3Q00A	4Q00A	31 Jan 2000A	1Q01A	2Q01E	3Q01E	4Q01E	31 Jan 2001E	31 Jan 2002E
<b>Revenues</b>														
Comverse Network Systems	334.24	431.86	625.71	181.51	190.44	204.07	223.75	799.77	240.38	248.40	0.07	248.40	1,021.46	1,264.53
Comverse Infosys	55.40	57.08	—	19.00	18.84	17.75	16.84	72.42	20.90	21.60	22.16	24.00	88.82	117.47
<b>Total Revenues</b>	<b>389.64</b>	<b>488.94</b>	<b>625.71</b>	<b>200.51</b>	<b>209.28</b>	<b>221.81</b>	<b>240.59</b>	<b>872.19</b>	<b>261.28</b>	<b>270.00</b>	<b>277.00</b>	<b>300.00</b>	<b>1,110.28</b>	<b>1,382.00</b>
<b>Cost of Revenues</b>	<b>169.52</b>	<b>202.64</b>	<b>279.69</b>	<b>77.43</b>	<b>79.07</b>	<b>83.23</b>	<b>90.08</b>	<b>329.80</b>	<b>97.35</b>	<b>99.04</b>	<b>105.26</b>	<b>114.00</b>	<b>413.35</b>	<b>504.43</b>
<b>Gross Profit</b>	<b>220.12</b>	<b>286.30</b>	<b>346.02</b>	<b>123.08</b>	<b>130.21</b>	<b>138.59</b>	<b>150.51</b>	<b>542.39</b>	<b>163.94</b>	<b>162.96</b>	<b>171.74</b>	<b>186.00</b>	<b>696.94</b>	<b>877.57</b>
Selling	93.60	138.31	151.99	42.85	44.15	46.72	50.36	184.08	54.22	54.76	57.62	61.80	230.48	280.55
General & Administrative Expenses														
Research & Development, Net	66.23	96.63	132.82	38.42	40.45	42.82	46.44	168.13	50.30	50.04	53.18	57.00	212.44	265.34
Royalties & License Fees	10.44	12.33	16.55	4.74	4.73	4.60	4.77	18.84	4.88	4.98	5.26	5.70	21.01	27.64
<b>Total Costs &amp; Expenses</b>	<b>170.28</b>	<b>247.26</b>	<b>301.36</b>	<b>86.00</b>	<b>89.34</b>	<b>94.14</b>	<b>101.58</b>	<b>371.05</b>	<b>109.40</b>	<b>109.78</b>	<b>116.06</b>	<b>124.50</b>	<b>463.93</b>	<b>573.53</b>
<b>Operating Income (Loss)</b>	<b>49.84</b>	<b>39.04</b>	<b>44.67</b>	<b>37.08</b>	<b>40.88</b>	<b>44.45</b>	<b>48.93</b>	<b>171.34</b>	<b>54.54</b>	<b>53.19</b>	<b>55.68</b>	<b>61.50</b>	<b>233.01</b>	<b>304.04</b>
Financial and Other Income (Expense)	2.47	4.72	8.26	3.01	3.32	4.18	6.01	16.52	6.51	5.50	6.00	6.00	26.91	22.00
Minority Interest	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—
<b>Pre-Tax Income</b>	<b>52.31</b>	<b>43.92</b>	<b>52.93</b>	<b>40.09</b>	<b>44.20</b>	<b>48.63</b>	<b>54.94</b>	<b>187.86</b>	<b>61.05</b>	<b>58.69</b>	<b>61.68</b>	<b>67.50</b>	<b>259.92</b>	<b>326.04</b>
Taxes on Income	10.17	9.40	11.78	3.52	3.80	4.02	4.41	15.74	4.64	4.52	4.87	5.22	19.23	23.45
<b>Net Income Before Extraordinary</b>	<b>42.14</b>	<b>34.52</b>	<b>41.15</b>	<b>36.57</b>	<b>40.40</b>	<b>44.61</b>	<b>50.53</b>	<b>172.12</b>	<b>56.41</b>	<b>54.17</b>	<b>56.81</b>	<b>62.28</b>	<b>240.69</b>	<b>302.59</b>
Merger Charge & Other Extraordinary	—	—	—	—	—	—	—	0.93	—	—	—	—	—	—
Effect of Dilutive Securities	2.59	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Net Income</b>	<b>44.72</b>	<b>34.52</b>	<b>41.15</b>	<b>36.57</b>	<b>40.40</b>	<b>44.61</b>	<b>50.53</b>	<b>171.18</b>	<b>56.41</b>	<b>54.17</b>	<b>56.81</b>	<b>62.28</b>	<b>240.69</b>	<b>302.59</b>
EPS — Fully Diluted Net Income Excl Extra	0.32	0.25	0.29	0.24	0.26	0.27	0.30	1.08	0.33	0.31	0.32	0.35	1.38	1.66
Average Shares Outstanding ('000's)	133,132	137,907	143,650	151,702	154,218	163,636	167,820	159,344	170,313	172,500	175,000	177,500	173,828	182,500
<b>Margin Analysis</b>														
<b>Gross Profit Margin</b>	<b>56.49%</b>	<b>58.55%</b>	<b>55.30%</b>	<b>61.38%</b>	<b>62.22%</b>	<b>62.48%</b>	<b>62.56%</b>	<b>62.19%</b>	<b>62.20%</b>	<b>62.20%</b>	<b>62.00%</b>	<b>62.00%</b>	<b>62.00%</b>	<b>62.00%</b>
Selling General & Administrative Expenses	24.02	28.29	24.29	19.16	19.33	19.30	19.30	21.11	19.00	19.10	19.20	19.00	19.00	19.00
Research & Development	17.00	19.76	21.23	21.37	21.10	21.06	20.93	19.28	21.00	20.90	20.80	20.60	20.60	20.60
Royalties & License Fees	2.68	2.52	2.65	—	—	—	—	2.16	0.20	0.20	0.20	0.21	0.21	0.21
<b>Operating Margin</b>	<b>12.79</b>	<b>7.98</b>	<b>7.14</b>	<b>18.49</b>	<b>19.53</b>	<b>20.04</b>	<b>20.34</b>	<b>19.64</b>	<b>20.87</b>	<b>19.70</b>	<b>20.10</b>	<b>20.50</b>	<b>20.99</b>	<b>22.00</b>
Pre-Tax Margin	13.42	8.98	8.46	19.99	21.12	21.92	22.84	21.54	22.50	22.40	22.27	22.50	22.50	22.50
Tax Rate	19.44	21.40	22.26	8.77	8.59	8.26	8.02	8.38	8.40	8.40	8.40	8.40	8.40	8.40
<b>Net Income Margin (Excl Extraordinary)</b>	<b>10.81</b>	<b>7.06</b>	<b>6.58</b>	<b>18.24</b>	<b>19.30</b>	<b>20.11</b>	<b>21.00</b>	<b>19.73</b>	<b>20.75</b>	<b>20.67</b>	<b>20.51</b>	<b>20.76</b>	<b>20.76</b>	<b>20.76</b>

Sources: Company reports and Salomon Smith Barney.

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**Figure 20. Eyretel plc — Income Statement, 1998-00 (UK Pounds in Millions, Except Per-Share Data)**

Fiscal Year Ended 31 Mar	1998	1999	2000
<b>Revenues</b>			
Continuing Operations	18465	19300	27927
Discontinued Operation	1092	378	
<b>Total Revenues</b>	<b>19560</b>	<b>19678</b>	<b>27927</b>
Cost of Revenues	8935	8168	11886
<b>Gross Profit</b>	<b>10625</b>	<b>11510</b>	<b>16042</b>
General and Administrative Expenses	9305	11683	18733
Operating Profit (loss) — Continuing Operations	1638	89	(2691)
Operating Profit (loss) — Discontinued Operations	(318)	(262)	
<b>Total Operating Profit (Loss)</b>	<b>1320</b>	<b>(173)</b>	<b>(2691)</b>
Interest Income (Expense), Net	(61)	(30)	48
Income (Loss) Before Provision for Taxes	1259	(203)	(2643)
Provision for Taxes	400	147	551
<b>Net Income (Loss)</b>	<b>859</b>	<b>(350)</b>	<b>(3194)</b>
Dividends Declared	20	703	400
Diluted Earnings (Loss) Per Share	0.76p	(0.64)p	(2.09)p

Source: Company reports.

Digital Logging and Quality Assurance Industry – 5 July 2000

**Figure 21. Witness Systems — Income Statement, 1997-99 (US Dollars in Millions, Except Per-Share Data)**

	1997	1998	1999
<b>Revenues</b>			
License	3,775	8,682	16,706
Services	1,138	2,444	6,221
Hardware	1,271	2,171	46
Total Revenues	6,184	13,297	22,973
<b>Cost of Revenues</b>			
License	164	310	327
Services	1,204	2,526	3,920
Hardware	1,574	2,482	46
Total Cost of Revenues	2,942	5,138	4,293
<b>Gross Profit</b>	<b>3,242</b>	<b>7,979</b>	<b>18,680</b>
<b>Operating Expenses:</b>			
Sales and Marketing	2,016	6,147	11,578
Research and Development	1,817	3,529	5,781
General and Administrative	1,684	2,141	3,777
Charge for Termination of Distribution Agreement		900	
Acquired In-Process Research and Development			3,506
Other Personnel Costs			678
<b>Operating Loss</b>	<b>(2,275)</b>	<b>(4,738)</b>	<b>(6,640)</b>
Interest Income (Expense) Net	62	(31)	(364)
<b>Loss before Provision for Taxes</b>	<b>(2,213)</b>	<b>(4,769)</b>	<b>(7,004)</b>
Provision for Income Taxes			
<b>Net Loss</b>	<b>(2,213)</b>	<b>(4,769)</b>	<b>(7,004)</b>
Preferred Stock Dividends and Accretion	(84)	(502)	(1,185)
Net Loss Applicable to Common Shareholders	(2,297)	(5,271)	(8,189)
Net Loss per Share	(0.32)	(0.76)	(1.37)
Diluted Weighted Average Common Shares	238	6,964	6,424

Source: Company reports.

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## Notes

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## Notes

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## Notes



**ADDITIONAL INFORMATION AVAILABLE UPON REQUEST**

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2000-EU4718CCP

# **EXHIBIT Q**

UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF CONNECTICUT

FILED

JUN 19 4 00 PM '00

DICTAPHONE CORPORATION,

Plaintiff,

v.

NICE SYSTEMS LTD. and NICE SYSTEMS INC.,

Defendants.

U.S. DISTRICT COURT  
Civil Action No. 00-00000

June 19, 2000

COMPLAINT FOR PATENT INFRINGEMENT  
JURY TRIAL DEMANDED

Plaintiff Dictaphone Corporation, by and through counsel, complains of  
defendants and alleges as follows:

PARTIES

1. Plaintiff, Dictaphone Corporation ("Dictaphone"), is a corporation organized and existing under the laws of the State of Delaware with its principal place of business in Stratford, Connecticut. Dictaphone is engaged in the business of design, manufacture, marketing, service and support of dictation products and communications recording and management systems. Dictaphone has been and is doing business in this judicial district.

2. Defendant Nice Systems Ltd. is an Israeli corporation with its principal executive offices located at 8 Hapnina Street, P.O. Box 690, Ra'anana, Israel 43107. Nice Systems, Inc. is a wholly-owned subsidiary of Nice Systems Ltd., is incorporated in the State of Delaware and maintains headquarters at 200 Plaza Dr., 4th Floor, Secaucus, New Jersey 07094

(Nice Systems, Ltd. and Nice Systems, Inc. are collectively referred to as "Nice" or "Defendants"). Nice resides and may be found in this judicial district, and is and at all times relevant hereto has been doing business in the District of Connecticut.

### JURISDICTION AND VENUE

3. This case is a civil action for federal patent infringement arising under the United States Patent Act of 1952, as amended, 35 U.S.C. § 271 et seq.

4. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338, as it involves claims arising under the patent laws of the United States.

5. Venue for this action is proper in this District pursuant to 28 U.S.C. §§ 1391(b), 1391(c), 1391(d) and 1400(b), since the asserted claims arose in this district and defendants, at all times material hereto, have been and are doing business in this district.

### BACKGROUND

#### Dictaphone's Business

6. Dictaphone is recognized as a worldwide leader in the design, manufacture, marketing, service and support of products for recording and management of telephone and voice communications. The history of Dictaphone can be traced back more than 100 years, to when Alexander Graham Bell invented the telephone. During about 1881, Mr. Bell and his associates developed technology to record sound for use with the newly invented telephone, which marked the beginning of the company that eventually became known as Dictaphone. Today, Dictaphone is the largest provider of dictation and other communications processing products in the United States with an established customer base of more than 300,000 customers.

7. Dictaphone's business is not limited to dictation products such as pocket-sized recorders. Dictaphone designs, manufactures, markets and services a wide-variety of equipment, including highly sophisticated systems known as "loggers" for recording and archival of communications and information. These systems monitor, capture and record large volumes of voice and other data transmitted over multiple communication channels, such as multiple telephone lines, and allow users to retrieve and playback specific data on command. Dictaphone's logger systems have particular use for compliance with regulations mandating recordation and archival of communications, for verification of transactions, and for protection against liability, and are in wide use in air traffic control facilities, financial institutions, police stations, hospitals, customer contact centers and penal institutions.

#### Dictaphone's Patented Technology

8. In late 1993, Dictaphone introduced digital loggers which revolutionized the communications recording industry and rendered the predecessor logger technology, known as analog technology, obsolete. These new digital products received widespread acclaim and created new market opportunities, including quality monitoring of customer contact center communications and verification of telephone sales transactions. Dictaphone's digital loggers have achieved tremendous commercial success, and provided millions of dollars of revenue to Dictaphone.

9. Dictaphone is a leader in the design, development, manufacture and service of digital loggers. Dictaphone's loggers record information in digital format, using hard drives and digital audio tape (DAT), which enables simultaneous recording and logging of a

large number of channels per unit, and immediate random access retrieval. Furthermore, Dictaphone's technology catalogs the information as it is recorded, thus permitting efficient search, review and retrieval of previously recorded information, even through a computer network. In sum, Dictaphone's pioneering technology permits recordation, monitoring, archival and playback of multiple channels of information, with virtually unlimited storage capacity.

10. Dictaphone has procured several patents directed at its digital logging technology. These patents encompass, among other areas, the equipment that is capable of recording multiple channels of information in digital format. Dictaphone's patents also encompass various methods for storing information in a digital logger, for retrieving information from a logger, and for retrieving information while information is being recorded. In addition, Dictaphone's patents encompass technology useful in mapping recorded information, and various methods for efficiently searching through archived information for pertinent data.

11. In addition to the sale of digital logging products, Dictaphone provides training and support services to customers who have purchased or leased Dictaphone's logger products. These services include training customers in the installation, operation, maintenance, and use of the logger products, and consulting and support services that include diagnosis and repair of hardware and software problems. Dictaphone also sells upgrades, modifications and improvements to the hardware and software contained in its various logger products to those entities that have previously purchased Dictaphone loggers. Most customers who purchase Dictaphone's logger systems also purchase Dictaphone's service contract. As a result, Dictaphone's service business is an important part of its overall business, and accounts for millions of dollars in annual revenue.

Nice's Products

12. Nice and Dictaphone are competitors in the digital logging field.

13. Nice manufactures, markets and services various digital logging products for use by the financial institutions, customer contact centers, air traffic control sites, and public safety centers. According to Nice, its products have the capability to record, store, evaluate and manage voice communications, call data, desktop screens and video. Dictaphone alleges that certain Nice loggers infringe two Dictaphone patents.

14. Nice's digital recording products include a system referred to as the NiceLog digital logging system, which is designed to permit total or selective recording, recording-on-demand, and real-time monitoring and recording of multiple channels of information. The NiceLog system permits search and selective retrieval of recorded communications, and playback through various methods.

15. Nice's digital recording products further include a system referred to as the NiceCall compact digital voice logger, which is similar to the NiceLog product but is designed for recording at smaller sites. According to Nice, the NiceCall product permits total or selective recording, recording-on-demand, and real-time monitoring and recording of multiple channels of information. The NiceCall system also permits search and selective retrieval of recorded communications, and playback of the selected information.

16. Nice's digital recording products further include systems referred to as the NiceVision digital video recording system for recordation of video and audio information, and NiceUniverse, for recording of telephonic information together with computer-screen-captured

information that is purportedly useful in monitoring customer service center agent communications. These systems also permit recordation, archival, search and retrieval of digitally recorded communications.

17. According to documentation Nice has submitted to the United States Securities and Exchange Commission ("SEC"), Nice provides technical support to the dealers that market the Nice products so that these dealers, and other companies that market the Nice products, can provide day-to-day support to end users. Additionally, in order to support its direct customers, Nice maintains a staff of customer service engineers that offer direct support and field service. Nice also maintains regular training sessions for its dealers.

18. Although Nice's products are sold on a worldwide basis, the company's SEC filings indicate that approximately 43%, 45% and 42% of the company's revenues were derived from sales made to customers in North America for the years ended December 31, 1996, 1997, and 1998, respectively.

#### Nice's Deliberate Disregard of Dictaphone's Rights

19. Dictaphone notified Nice of its digital logging patents and the infringement of certain Dictaphone patents by the Nice logger products in a series of letters sent by Dictaphone during December, 1998 through May, 1999. Dictaphone also provided copies of these patents and the corresponding patent office files to Nice during December 1998 and January 1999.

20. Nice did not provide any substantive response to Dictaphone's notification letters, and has continued its infringing conduct. Nice's disregard for Dictaphone's patent rights

is demonstrated in a submission that Nice made to the SEC. In a report filed with the SEC on or about June 30, 1999, known as Form 20F, Nice made only a casual reference to the dispute with Dictaphone, even though the Dictaphone patents cover a substantial number of Nice products which have been sold since at least as early as 1994 and the revenues resulting from said infringing products are substantial. In the Form 20F filing, Nice only reported that it "was advised by [a] competitor that the Company may be infringing certain patents of such competitor" and that "the Company is presently examining the competitor's patent [sic] and has not yet determined the merit of such claim."

### COUNT I

#### (Patent Infringement)

21. Dictaphone repeats, realleges and fully incorporates herein by reference, paragraphs 1 through 20 above.

22. Dictaphone holds all right, title and interest in and to U.S. Patent No. 5,396,371 issued March 7, 1995 ("the '371 patent"), entitled "Endless Loop Voice Data Storage and Retrievable Apparatus and Method Thereof" and naming John Henits, Robert Swick, Constantine Messologitis, and Christopher Goane as inventors. A copy of the '371 patent is attached hereto as Exhibit A.

23. Defendants have and continue to infringe, contributorily infringe and cause inducement of infringement of the '371 patent under 35 U.S.C. § 271 in this judicial district and elsewhere in the United States by manufacturing, importing, offering for sale, sale, and use, without authority or license of Dictaphone, of the products and methods described therein.

24. Defendants' infringement of the '371 patent has been willful, wanton and deliberate, and with full knowledge of the '371 patent.

25. Defendants' acts have already caused, and unless restrained and enjoined will continue to cause, irreparable injury and damage to Dictaphone for which Dictaphone has no adequate remedy at law.

## COUNT II

### (Patent Infringement)

26. Dictaphone repeats, realleges and fully incorporates herein by reference, paragraphs 1 through 20 above.

27. Dictaphone holds all right, title and interest in and to U.S. Patent No. 5,339,203 issued August 16, 1994 ("the '203 patent"), entitled "Apparatus and Method of Retrieving a Message From a Digital Audio Tape" and naming John Henits and Robert Swick as inventors. A copy of the '203 patent is attached hereto as Exhibit B.

28. Defendants have and continue to infringe, contributorily infringe and cause inducement of infringement of the '203 patent under 35 U.S.C. § 271 in this judicial district and elsewhere in the United States by manufacturing, importing, offering for sale, sale, and use, without authority or license of Dictaphone, of the products and methods described therein.

29. Defendants' infringement of the '203 patent has been willful, wanton and deliberate, and with full knowledge of the '203 patent.

30. Defendants' acts have already caused, and unless restrained and enjoined will continue to cause, irreparable injury and damage to Dictaphone for which Dictaphone has no adequate remedy at law.

**PRAYER FOR RELIEF**

WHEREFORE, plaintiff Dictaphone prays for relief and judgment as follows:

1. That Nice and all parents, subsidiaries, affiliates, officers, agents, servants, employees, attorneys, successors and assigns, and all persons in active concert or participation with them, be permanently enjoined and restrained from further acts of infringement, contributory infringement and inducement of infringement of the '371 and '203 patents.
2. That Dictaphone be awarded profits and damages, to be assessed by or under the Court's discretion, adequate to compensate Dictaphone for infringement of Dictaphone's patents, together with pre-judgment interest.
3. That Dictaphone recover from defendants increased damages in the amount of three times the amount found or assessed, for the deliberate and willful nature of defendants' infringing activities.
4. That Dictaphone recover from defendants of its costs, disbursements and attorneys' fees in preparing for and pursuing this action, pursuant to 35 U.S.C. §285.
5. That Dictaphone be awarded such other and further relief as the Court deems equitable, just and proper.

**JURY TRIAL DEMANDED**

DICTAPHONE CORPORATION

By: 

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Matthew J. Becker (ct10050)  
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Attorneys for Plaintiff  
DICTAPHONE CORPORATION

## SUMMARY OF THE DOCUMENT TO BE SERVED

Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters,  
signed at The Hague, the 15th of November 1965.  
(Article 5, fourth paragraph)

Name and address of the requesting authority: .... Robin Tabora, Deputy in Charge, U.S. District  
Court, 450 Main Street, Hartford, CT 06103, USA.; on behalf of: .....  
James Sicilian Esq., Day, Berry & Howard LLP, 185 Asylum Street, Hartford, CT 06103  
Particulars of the parties\*: ..... Dictaphone Corporation, Plaintiff v. Nice Systems Ltd. and  
Nice Systems, Inc.; Defendants: .....

### JUDICIAL DOCUMENT\*\*

Nature and purpose of the document: ..... Commencement of a civil lawsuit in the United States  
District Court for the District of Connecticut; Summons to answer the Complaint.

Nature and purpose of the proceedings and, where appropriate, the amount in dispute: ... Civil lawsuit for  
Patent Infringement under 35 U.S.C. §. 271 and 285; monetary damages and  
injunctive relief as ordered by the Court.

Date and place for entering appearance\*\*: .....

Court which has given judgment\*\*: .....

Date of judgment\*\*: .....

Time-limits stated in the document\*\*: ..... File with the Court and serve upon Plaintiff's counsel  
an Answer to the Complaint within twenty (20) days after service of the  
Summons, exclusive of the day of service.

### EXTRAJUDICIAL DOCUMENT\*\*

Nature and purpose of the document: .....

Time-limits stated in the document\*\*: .....

\* If appropriate, identity and address of the person interested in the transmission of the document.  
\*\* Delete if inappropriate.

# **EXHIBIT R**

(RCx), AO279, CLOSED, DISCOVERY

**UNITED STATES DISTRICT COURT, CENTRAL DISTRICT OF CALIFORNIA  
(Western Division - Los Angeles)  
CIVIL DOCKET FOR CASE #: 2:04-cv-06160-ER-RC**

Dictaphone Corporation v. Voice Print International Inc  
Assigned to: Judge Edward Rafeedie  
Referred to: Magistrate Judge Rosalyn M. Chapman  
Cause: 15:1126 Patent Infringement

Date Filed: 07/27/2004  
Date Terminated: 01/13/2006  
Jury Demand: Both  
Nature of Suit: 830 Patent  
Jurisdiction: Federal Question

**Plaintiff**

**Dictaphone Corporation**

represented by **Allan Gabriel**  
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*ATTORNEY TO BE NOTICED*

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V.

**Defendant**

**Voice Print International Inc**

represented by **D Barclay Edmundson**  
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**Lisa C Ward**  
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949-567-6700  
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**Counter Claimant**

**Voice Print International Inc**

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(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Lisa C Ward**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

V.

**Counter Defendant**

**Dictaphone Corporation**

represented by **Allan Gabriel**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Dov H Scherzer**  
(See above for address)  
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**Frederick L Whitmer**  
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*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

**Pamela Gayle Maher**  
(See above for address)  
*LEAD ATTORNEY*  
*ATTORNEY TO BE NOTICED*

Date Filed	#	Docket Text
07/27/2004	1	COMPLAINT against defendant Voice Print International Inc. (Filing fee \$150.) Jury Demand. filed by plaintiff Dictaphone Corporation.(jag, ) (Entered: 08/02/2004)
07/27/2004		FAX number for Attorney Christopher A Mathews is 213-892-2300. (jag, ) (Entered: 08/02/2004)
07/27/2004		20-Day Summons Issued re Complaint - (Discovery)[1] as to Voice Print International Inc. (jag, ) (Entered: 08/02/2004)
07/27/2004	2	NOTICE of Interested Parties filed by Plaintiff Dictaphone Corporation. (jag, ) (Entered: 08/02/2004)
07/27/2004		REPORT ON THE FILING OF AN ACTION REGARDING TRADEMARKS (cc: form mailed to Washington, D.C.) (Opening) (jag, ) (Entered: 08/02/2004)
11/29/2004	3	NOTICE of appearance and association of Gary A. Clark, Bridgette A. Carey, and the firm of Sheppard Mullin, Richter and Hampton LLP, as attorneys of record for plaintiff Dictaphone Corporation filed by plaintiff Dictaphone Corporation. (bp, ) (Entered: 12/02/2004)
11/29/2004	4	PROOF OF SERVICE Executed by plaintiff Dictaphone Corporation, upon Voice Print International Inc served on 11/29/2004, answer due 12/19/2004. The Summons and Complaint were served by personal service, by state statute, upon Steven B. Sohman-agent for service of process. Due Dilligence declaration not attached. Original Summons not returned. (bp, ) (Entered: 12/02/2004)
12/09/2004	<u>5</u>	APPLICATION AND ORDER of Non-Resident Attorney to Appear in a Specific Case by Jonathan K Cooperman for Dictaphone Corporation, designating Gary A. Clark as local counsel. Fee paid. Approved by Judge Edward Rafeedie.(bp, ) (Entered: 12/10/2004)

12/09/2004	<u>6</u>	APPLICATION AND ORDER of Non-Resident Attorney to Appear in a Specific Case by Anthony Meola for Dictaphone Corporation, designating Gary A. Clark as local counsel. Fee paid. Approved by Judge Edward Rafeedie.(bp, ) (Entered: 12/10/2004)
12/09/2004	<u>7</u>	APPLICATION AND ORDER of Non-Resident Attorney to Appear in a Specific Case by Paul W Garrity for Dictaphone Corporation, designating Gary A. Clark as local counsel. Fee paid. Approved by Judge Edward Rafeedie.(bp, ) (Entered: 12/10/2004)
12/09/2004	<u>8</u>	Substitution of Attorney filed. Substituting attorney Gary A Clark for Dictaphone Corporation in place and stead of attorney Christopher A Mathews by Judge Edward Rafeedie. (bp, ) (Entered: 12/10/2004)
12/09/2004		FAX number for Attorney Jonathan K Cooperman is 212-808-7897. (bp, ) (Entered: 12/10/2004)
01/13/2005	<u>9</u>	STIPULATION Extending time to answer or otherwise respond to Complaint AND ORDER by Judge Edward Rafeedie: granting Defendant Voice Print International Inc an extension of time to respond to the Complaint. The answer is due 1/17/2005(shb, ) (Entered: 01/14/2005)
01/14/2005	<u>10</u>	ANSWER to Complaint - (Discovery)[1] with JURY DEMAND, COUNTERCLAIM against Dictaphone Corporation filed by defendant Voice Print International Inc.(bp, ) (Entered: 01/18/2005)
01/14/2005	<u>11</u>	NOTICE of Interested Parties filed by Counter Claimant Voice Print International Inc, Defendant Voice Print International Inc. (bp, ) (Entered: 01/18/2005)
01/18/2005	<u>12</u>	ORDER: Notice of intent to schedule case by Judge Edward Rafeedie, (see document for details)(bp, ) (Entered: 01/19/2005)
02/07/2005	<u>13</u>	ANSWER to Counterclaim[10] filed by plaintiff Dictaphone Corporation.(bp, ) (Entered: 02/08/2005)
04/20/2005	<u>14</u>	MINUTES: The court, on its own motion, hereby ORDERS plaintiffs to show cause in writing no later than 5/20/05 why this action should not be dismissed for lack of prosecution. Judge Edward Rafeedie.Court Reporter: None present. (bp, ) (Entered: 04/21/2005)
05/19/2005	<u>15</u>	RESPONSE to Order to Show Cause filed by Plaintiff Dictaphone Corporation <u>14</u> (bp, ) (Entered: 05/20/2005)
05/19/2005	<u>16</u>	JOINT REPORT Rule 26(f) Discovery Plan filed; estimated length of trial 20-days. (bp, ) (Entered: 05/20/2005)
05/19/2005	<u>17</u>	MINUTES: The court has read and considered the report of the parties planning meeting filed on 5/19/05. Since the parties have complied with this court's order to show cause issued 4/20/05, the court hereby orders that this court's order to show cause is discharged Judge Edward Rafeedie : Court Reporter: None present. (bp, ) (Entered: 05/20/2005)
05/20/2005	<u>18</u>	ORDER: The Conduct of Trials, a Neglected area of Judicial Reform by

		Judge Edward Rafeedie, (see document for details)(bp, ) (Entered: 05/20/2005)
05/20/2005	<u>19</u>	ORDER RE: Preparation of Jury Instructions by Judge Edward Rafeedie, (see document for details)(bp, ) (Entered: 05/20/2005)
05/20/2005	<u>20</u>	ORDER re preparation of trial exhibits by Judge Edward Rafeedie,(see document for details)(bp, ) (Entered: 05/20/2005)
05/20/2005	<u>21</u>	SCHEDULING ORDER by Judge Edward Rafeedie: All discovery, including discovery motions, shall be completed by 2/24/06. Discovery motions must be filed and heard prior to this date. The parties shall have until 2/9/06 to file all other motions. Jury Trial set for 4/4/2006 09:30 AM before Honorable Edward Rafeedie. Pretrial Conference set for 3/27/2005 01:30 PM before Honorable Edward Rafeedie.(bp, ) (Entered: 05/20/2005)
08/17/2005	<u>22</u>	REQUEST FOR APPROVAL OF SUBSTITUTION OF ATTORNEY: Substitute attorney Lawfirm Sheppard Mullin Righter and Hamilton in place of Lawfirm Brown Rayshan Millstein Felder and Steiner filed by plaintiff Dictaphone Corporation. Lodged Proposed Order. (jp, ) (Entered: 08/22/2005)
08/23/2005	<u>23</u>	ORDER by Judge Edward Rafeedie : granting [22] Request to Substitute Attorney. Added attorney Allan Gabriel for Dictaphone Corporation. Attorney Bridgette A Carey and Gary A Clark terminated (bp, ) (Entered: 08/24/2005)
08/30/2005	<u>24</u>	NOTICE OF MOTION AND MOTION to Compel production of initial disclosures and responses to interrogatories and document requests by plaintiff filed by defendant Voice Print International Inc, Voice Print International Inc. Motion set for hearing on 9/21/2005 at 09:30 AM before Magistrate Rosalyn M. Chapman. Lodged proposed order. (bp, ) (Entered: 08/31/2005)
08/30/2005	<u>25</u>	JOINT STIPULATION IN SUPPORT OF MOTION to Compel[24] filed by defendant Voice Print International Inc. (bp, ) (Entered: 08/31/2005)
09/07/2005	<u>26</u>	SUPPLEMENTAL MEMORANDUM filed by plaintiff Dictaphone Corporation. (bp, ) (Entered: 09/13/2005)
09/12/2005	<u>30</u>	APPLICATION for attorney Frederick L. Whitmer to Appear Pro Hac Vice. FEE paid. filed by plaintiff Dictaphone Corporation, Dictaphone Corporation. Lodged proposed order. (bp, ) (Entered: 09/19/2005)
09/13/2005	<u>27</u>	APPLICATION for attorney Dov H. Scherzer to Appear Pro Hac Vice. FEE paid. filed by plaintiffs' Dictaphone Corporation, Dictaphone Corporation. Lodged proposed order. (bp, ) (Entered: 09/16/2005)
09/15/2005	<u>28</u>	ORDER by Judge Edward Rafeedie : granting [27] Application to Appear Pro Hac Vice by Attorney Dov H. Scherzer on behalf of plaintiff, Dictaphone Corporation, designating Pameal G. Maher as local counsel. (bp, ) (Entered: 09/16/2005)

09/16/2005	<u>29</u>	MINUTES OF IN CHAMBERS ORDER by Judge Rosalyn M. Chapman ; RE: MOTION to Compel[24] Defendant's motion to compel IS HEREBY ORDERED continued to October 5, 2005, at 9:30 a.m.; however, for the purpose of filing any supplemental memorandum, the hearing date of September 21, 2005, should be use. (med, ) (Entered: 09/16/2005)
09/27/2005	31	NOTICE of partial withdrawal of motion of defendant Voice Print to compel production of initial disclosures and responses to interrogatories and documents filed by defendant Voice Print International Inc, Voice Print International Inc. (bp, ) (Entered: 09/30/2005)
09/30/2005	32	NOTICE of Second Supplemental notice of partial withdrawal of motion of defendant Voice Print to compel production of initial disclosures and responses to interrogatories and document requests from Dictaphone corporation filed by defendant Voice Print International Inc, Voice Print International Inc. (bp, ) (Entered: 10/04/2005)
10/05/2005	<u>33</u>	MINUTES OF Discovery Hearing held before Rosalyn M. Chapman ; RE: MOTION to Compel[24] - ORDER DENYING DEFENDANT'S REQUEST FOR ATTORNEY'S FEES (See Minute Order for Details.) (med, ) (Entered: 10/06/2005)
10/07/2005	<u>34</u>	ORDER by Judge Edward Rafeedie : granting [30] Application to Appear Pro Hac Vice by Attorney Frederick L. Whitmer on behalf of plaintiff, Dictaphone corporation, designating Allan Gabriel as local counsel. (bp, ) (Entered: 10/11/2005)
01/13/2006	<u>35</u>	STIPULATION FOR DISMISSAL OF THE ACTION WITHOUT PREJUDICE: IT IS HEREBY STIPULATED AND AGREED that pursuant to agreement of all parties, all claims and counterclaims in this action are DISMISSED in their entirety without prejudice, with each party to bear its respective costs and attorneys fees. IT IS SO ORDERED by Judge Edward Rafeedie, (Made JS-6. Case Terminated.)(jp, ) (Entered: 01/17/2006)

PACER Service Center			
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11/20/2007 14:53:16			
PACER Login:	ks0009	Client Code:	42234-0006 01971
Description:	Docket Report	Search Criteria:	2:04-cv-06160-ER-RC
Billable Pages:	4	Cost:	0.32

# **EXHIBIT S**

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IN THE UNITED STATES DISTRICT COURT  
 FOR THE SOUTHERN DISTRICT OF NEW YORK

\_\_\_\_\_  
 DICTAPHONE CORPORATION,

Plaintiff,

v.

MERCOM SYSTEMS, INC.,

Defendant.  
 \_\_\_\_\_

**COMPLAINT**

04 CV 5844 (MBM) (THK)

ECF CASE

Jury trial demanded

Plaintiff Dictaphone Corporation ("Plaintiff"), by its attorneys, complaining of defendant, alleges as follows:

**JURISDICTION AND VENUE**

1. This is a civil action for patent infringement arising under the Patent Laws of the United States, particularly 35 U.S.C. § 271, §§ 281-287 and 289. This Court has jurisdiction of this matter under 28 U.S.C. §§ 1331, 1338(a).

2. Venue in this judicial district is proper pursuant to Title 28 U.S.C. §§ 1391(b), (c) and 1400 (b), because the Defendant resides in this judicial district.

**THE PARTIES**

3. Plaintiff is a corporation organized and existing under the laws of the state of Delaware, having its principal place of business at 3191 Broadbridge Avenue, Stratford CT 06614.

4. Upon information and belief, Mercom Systems, Inc. ("Defendant") is a corporation organized and existing under the laws of state of New York, having its principal place of business at 9 Polito Avenue, Lyndhurst, N.J. 07071.

### **BACKGROUND**

5. Plaintiff is the owner by assignment of United States Patent No. 6,246,752 (the "'752 patent"), entitled "SYSTEM AND METHOD FOR DATA RECORDING" which was duly and legally issued by the United States Patent and Trademark Office on June 12, 2001 to named inventors Valerie Bscheider, David A. Glowny, and John E. Richter. A copy of the '752 patent is attached hereto as Exhibit A.

6. Plaintiff is the owner by assignment of United States Patent No. 5,396,371 (the "'371 patent"), entitled "ENDLESS LOOP VOICE DATA STORAGE AND RETRIEVABLE APPARATUS AND METHOD THEREOF" which was duly and legally issued by the United States Patent and Trademark Office on March 7, 1995, to named inventors John Henits, Robert B. Swick, Constantine P. Messologitis and Christopher S. Goane. A copy of the '371 patent is attached hereto as Exhibit B.

7. Defendant is currently infringing the '752 patent (Exhibit A) by making, having made, using, offering for sale, or selling audio recording and audio storage devices (Audiolog), which embody the patented invention and Defendant will continue to do so unless enjoined by the Court. A copy of advertisement and promotional materials describing the infringing product is attached as Exhibit C.

8. Defendant is currently infringing the '371 patent (Exhibit B) by making, having made, using, offering for sale, or selling audio recording and audio storage devices (Audiolog), which embody the patented invention and Defendant will continue to do so unless enjoined by the Court. A copy of advertisement and promotional materials describing the infringing product is attached as Exhibit C.

9. By reason of the infringement by Defendant, Plaintiff has suffered damage and irreparable harm, and continues to suffer such damage and irreparable harm.

10. Plaintiff's reputation as a leader in the manufacture of audio recording and audio storage devices of the type covered by the '371 and '752 patents (hereinafter collectively the patents-in-suit) has been irreparably harmed by the manufacture, sale, offer for sale, and use of the infringing products of Defendant.

11. Plaintiff will be unable to recoup its substantial investment in research and development of its patented apparatus unless Defendant's infringement is stopped immediately.

12. The continued manufacture, use, offer for sale, or sale by Defendant, its distributors or affiliates of the infringing audio recording and audio storage devices will cause erosion of Plaintiff's market share which cannot be recaptured due to market conditions and cannot be adequately compensated by money damages.

#### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff, Dictaphone Corporation, prays for relief as follows:

1. Preliminary and permanent orders enjoining Defendant Mercom Systems, Inc. and all Mercom Systems, Inc. officers, agents, servants, subcontractors, suppliers, employees, distributors, dealers and all other persons acting in concert or participation with it or them or controlled by it or them from further acts of infringement, either directly, contributorily or by active inducement;

2. An award of damages, together with interest and costs, to compensate Dictaphone for the infringement by the Defendant, including Dictaphone's lost profits, damage to reputation and the total profit obtained by Defendant as required under 35 U.S.C. §§ 284 and 289;

3. An award of attorneys' fees in accordance with Section 285 of Title 35 of the United States Code; and

4. All other and further relief as justice requires.

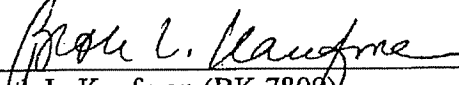
**JURY DEMAND**

Plaintiff hereby demands a trial by jury of its claims set forth herein as provided under Federal Rules of Procedure 38(b).

Dated: New York, NY  
July 27, 2004

Respectfully submitted,

SCHOEMAN, UPDIKE & KAUFMAN, LLP

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Of Counsel:

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Attorneys for Defendant Mercom Systems, Inc.

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

DICTAPHONE CORPORATION,  Plaintiff,  -against-  MERCOM SYSTEMS, INC.,  Defendant.
MERCOM SYSTEMS, INC.,  Counterclaim-Plaintiff,  -against-  DICTAPHONE CORPORATION,  Counterclaim-Defendant.

Hon. Michael B. Mukasey

Docket No. 04 Civ. 5844 (MBM) (THK)

ANSWER AND COUNTERCLAIMS

Defendant, Mercom Systems, Inc. ("Mercom"), by its attorneys, The Law Offices Of Share And Blejec LLP, for its Answer, alleges as follows:

JURISDICTION AND VENUE

1. Admits the truth of the allegations contained in paragraph "1" of the Complaint.
2. Admits the truth of the allegations contained in paragraph "2" of the Complaint.

THE PARTIES

3. Admits the truth of the allegations contained in paragraph "3" of the Complaint.
4. Admits the truth of the allegations contained in paragraph "4" of the Complaint.

#### BACKGROUND

5. Mercom admits that the face of United State Patent No. 6,246,752 ("752") indicates that the United States Patent and Trademark Office issued the '752 patent on June 12, 2001, that Valerie Bscheider, David A. Glowny and John E. Richter are named inventors on the '752 patent and that a copy of the '752 patent is attached to the Complaint as Exhibit A. As to the remaining allegations of paragraph 5, Mercom lacks knowledge or information sufficient to form a belief as to their truth and therefore denies them.

6. Mercom admits that the face of the United States Patent No. 5,396,371 ("371") indicates that the United States Patent and Trademark Office issued the '371 patent on March 7, 1995, that John Henits, Robert B. Swick, Constantine P. Messologitis and Christopher S. Goane are named inventors on the '371 patent and that a copy of the '371 patent is attached to the Complaint as Exhibit B. As to the remaining allegations of paragraph 6, Mercom is without knowledge or information sufficient to form a belief as to their truth and therefore denies them.

7. Denies the truth of the allegations contained in paragraph "7" of the Complaint.
8. Denies the truth of the allegations contained in paragraph "8" of the Complaint.
9. Denies the truth of the allegations contained in paragraph "9" of the Complaint.
10. Denies the truth of the allegations contained in paragraph "10" of the Complaint.
11. Denies the truth of the allegations contained in paragraph "11" of the Complaint.
12. Denies the truth of the allegations contained in paragraph "12" of the Complaint.

#### FIRST AFFIRMATIVE DEFENSE (Failure To State A Claim)

13. The Complaint fails to state a claim upon which relief could be granted.

#### SECOND AFFIRMATIVE DEFENSE (Patent Invalidity)

14. The claims of the '371 patent and the '752 patent (collectively "The Patents") are invalid for failing to comply with one or more of the following statutory provisions: 35 U.S.C. §§ 101, 102, 103 and 112.

THIRD AFFIRMATIVE DEFENSE  
(Non Infringement)

15. Mercom has not infringed, directly or indirectly, contributorily or by inducement, any of the claims of The Patents either literally or under the doctrine of equivalents.

FOURTH AFFIRMATIVE DEFENSE  
(Laches)

16. Dictaphone is barred by the doctrine of laches from enforcing The Patents against Mercom.

FIFTH AFFIRMATIVE DEFENSE  
(Equitable Estoppel)

17. Dictaphone is barred by the doctrine of equitable estoppel from enforcing The Patents against Mercom.

SIXTH AFFIRMATIVE DEFENSE  
(Patent Misuse)

18. Dictaphone's claims against Mercom are barred by Dictaphone's patent misuse.

SEVENTH AFFIRMATIVE DEFENSE  
(Unenforceability)

19. The '371 patent is unenforceable due to inequitable conduct. Specifically, during prosecution:

(a) The applicants intentionally misrepresented to the Patent Office the teachings of another Dictaphone Patent, U.S. Patent No. 4,891,835 to Leung, et al., and intentionally misrepresented to the Patent Office the claimed subject matter of Claim 8 of the '371 Patent.

(b) More particularly, the '371 prosecution history reveals that in the Amendment, dated June 23, 1994, at page 2, last three lines, counsel for Dictaphone argued to the Patent Office: "Consequently it cannot be said that audio is retrieved from a random access storage device while audio is being written thereto. It will be noted that there is no provision for the same in Leung et al." (The Amendment, dated June 23, 1994, stamped received July 1, 1994, part of the prosecution history of the '371 file wrapper, is annexed hereto as Exhibit 1 ("Exhibit 1" or the "Amendment").

(c) In contrast, in U.S. Patent No. 4,891,835, Leung, et al, at column 2, lines 31-36, it is stated: "The audio signals on the message channel are converted into corresponding digital signals, and the digital signals are stored in a storage device, such as a dynamic random-access memory ("DRAM") or other suitable storage device." And at column 2, lines 41-48, it is stated: "The steps of converting the incoming audio signals and storing the corresponding digital signals may be accomplished substantially simultaneously with the steps of recalling the digital signals and converting the digital signals into analog audio signals. Hence, a message being recorded may be replayed as it is being recorded, or one message may be recorded while another message is being replayed."

(d) It is clear that counsel for Dictaphone, while prosecuting U.S. Patent No. 5,396,371, mislead the Patent Examiner with respect to the teachings of U.S. Patent No. 4,891,835, a Dictaphone Patent.

(e) Applicants also argued in the Amendment, (see Exhibit 1, at page 3), "The Examiner has an extensive discussion relative to audio compression, but claims 5-8 are primarily directed to a digital audio tape drive unit in communication with a buffer, which buffer communicates

with the random storage device through a pair of pointers. Nothing of this nature is disclosed either by Leung et al or by Knitl." (Exhibit 1, at page 3.)

(f) Dictaphone's counsel stated that claims 5-8 are directed to a digital audio tape drive unit not found in Leung. However, claim 8 does not contain any reference to a digital audio tape drive unit. Again, Dictaphone's counsel mislead the Examiner.

EIGHTH AFFIRMATIVE DEFENSE  
(Prosecution History Estoppel)

20. Dictaphone is barred by prosecution history estoppel from presenting an interpretation of the claims necessary to find infringement of The Patents.

NINTH AFFIRMATIVE DEFENSE  
(Jury Trial Barred For Equitable Claims)

21. Dictaphone's request for a jury is barred with respect to those claims for which it seeks, in whole or in part, equitable or declaratory relief.

COUNTERCLAIMS

Defendant and Counterclaim-Plaintiff, Mercom Systems, Inc. ("Mercom") hereby asserts the following counterclaims against Counterclaim-Defendant Dictaphone ("Dictaphone").

JURISDICTION AND VENUE

22. This is an action for declaratory judgment of patent invalidity, non-infringement, and unenforceability. This action arises under the Declaratory Judgment Act, 28 U.S.C. §§ 2201-2202, and the patent law of the United States, Title 35, United States Code. This Court has jurisdiction over the subject matter of this action in accordance with 28 U.S.C. §§ 1331 and 1338(a). Dictaphone has sued Mercom alleging patent infringement in this district. Venue is proper under 28 U.S.C. § 1391(b) and (c).

THE PARTIES

23. Mercom is a corporation organized under the laws of the State of New York, having its principal place of business at 9 Polito Avenue, Lyndhurst, New Jersey 07071.

24. Dictaphone claims to be a corporation organized under the laws of the State of Delaware, with its principle place of business at 3191 Broadbridge Avenue, Stratford, Connecticut 06614.

25. Dictaphone claims ownership of The Patents and has charged Mercom with infringement of The Patents. Mercom denied the charge of infringement and alleged that The Patents are invalid and not enforceable.

26. There is an actual and justiciable controversy between Mercom and Dictaphone with respect to the validity, infringement and enforceability of The Patents.

FIRST COUNTERCLAIM --  
DECLARATORY JUDGMENT OF NON-INFRINGEMENT

27. Mercom reasserts and realleges paragraphs 1 through 25 by reference as if set forth here in full.

28. Mercom has not directly infringed, contributed toward the infringement of, or actively induced others to infringe any valid enforceable claim of any of The Patents, neither literally nor under the doctrine of equivalents.

SECOND COUNTERCLAIM --  
DECLARATORY JUDGMENT OF INVALIDITY

29. Mercom reasserts and realleges paragraphs 1 through 27 by reference as if set forth here in full.

30. The Patents are invalid for failure to comply with one or more of the following statutory provisions: 35 U.S.C. §§ 101, 102, 103 and 112.

THIRD COUNTERCLAIM --  
DECLARATORY JUDGMENT THAT THE PATENTS ARE NOT ENFORCEABLE

31. Mercom reasserts and realleges paragraphs 1 through 29 by reference as if set forth here in full.

32. The Patents are not enforceable against Mercom due to estoppel, laches and patent misuse.

33. The '371 patent is unenforceable due to inequitable conduct. Specifically, during prosecution:

(a) The applicants intentionally misrepresented to the Patent Office the teachings of another Dictaphone Patent, U.S. Patent No. 4,891,835 to Leung, et al., and intentionally misrepresented to the Patent Office the claimed subject matter of Claim 8 of the '371 Patent.

(b) More particularly, the '371 prosecution history reveals that in the Amendment, dated June 23, 1994, at page 2, last three lines, counsel for Dictaphone argued to the Patent Office: "Consequently it cannot be said that audio is retrieved from a random access storage device while audio is being written thereto. It will be noted that there is no provision for the same in Leung et al." (The Amendment, dated June 23, 1994, stamped received July 1, 1994, part of the prosecution history of the '371 file wrapper, is annexed hereto as Exhibit 1 ("Exhibit 1" or the "Amendment").

(c) In contrast, in U.S. Patent No. 4,891,835, Leung, et al, at column 2, lines 31-36, it is stated: "The audio signals on the message channel are converted into corresponding digital signals, and the digital signals are stored in a storage device, such as a dynamic random-access memory ("DRAM") or other suitable storage device." And at column 2, lines 41-48, it is stated: "The steps of converting the incoming audio signals and storing the corresponding digital signals may be accomplished substantially simultaneously with the steps of recalling the digital signals and converting the digital signals into analog audio signals. Hence, a message being recorded

may be replayed as it is being recorded, or one message may be recorded while another message is being replayed.”

(d) It is clear that counsel for Dictaphone, while prosecuting U.S. Patent No. 5,396,371, mislead the Patent Examiner with respect to the teachings of U.S. Patent No. 4,891,835, a Dictaphone Patent.

(e) Applicants also argued in the Amendment, (see Exhibit 1, at page 3), “The Examiner has an extensive discussion relative to audio compression, but claims 5-8 are primarily directed to a digital audio tape drive unit in communication with a buffer, which buffer communicates with the random storage device through a pair of pointers. Nothing of this nature is disclosed either by Leung et al or by Knitl.” (Exhibit 1, at page 3.)

(f) Dictaphone’s counsel stated that claims 5-8 are directed to a digital audio tape drive unit not found in Leung. However, claim 8 does not contain any reference to a digital audio tape drive unit. Again, Dictaphone’s counsel mislead the Examiner.

WHEREFORE, Mercom respectfully requests that this Court:

(a) enter an order and judgment, pursuant to Fed.R.Civ.P. Rule 54(b), dismissing the Complaint with prejudice, and awarding Mercom the costs and disbursements of this action, reasonable attorney’s fees and such other further and different relief as this Court may deem just and proper;

(b) enter an order and judgment declaring that The Patents are invalid, unenforceable and void;

(c) enter an order and judgment declaring that this is an exceptional case under 35 U.S.C. § 285 and awarding Mercom costs and reasonable attorney’s fees according to law; and

(d) enter an order and judgment granting Mercom such other further and different relief  
as this Court deems just and proper.

Dated: New York, NY  
January 25, 2005

Respectfully submitted,

/s/

---

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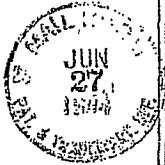
Attorneys for Defendant  
Mercom Systems, Inc.

Exhibit 1

Exhibit 1

Exhibit 1

Exhibit 1



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of )  
John Henits et al. ) Attorney Docket No.: DIC-606  
Serial No.: 08/171,296 ) Group Art Unit: 2514  
Filed: December 21, 1993 ) Examiner: T. Le  
For: ENDLESS LOOP VOICE ) Date: June 23, 1994  
DATA STORAGE AND )  
RETRIEVABLE APPARATUS )  
AND METHOD THEREOF )

RECEIVED

JUL 01 1994

AMENDMENT

Commissioner of Patents and Trademarks  
Washington, DC 20231

S I R:

In response to the Office Action of March 24, 1994, please amend the  
above entitled application as follows:

In The Claims

Claim 7, line 5, delete "printer" and substitute therefor --pointer--.

Claim 8, lines 6 & 8, delete "printers" and substitute therefor --pointers--.

REMARKS

The Examiner rejected Claim 6 under 35 USC 112 as being indefinite. In  
reviewing the claims, the applicant has found that the term "printer" has been  
used in places instead of the word "pointer". The applicant does not find the  
word printer in Claim 6 however finds the word in Claims 7 and 8. Claims 7 and  
8 have been amended to correct the error. With regard to the element "said

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second pointer" in Claim 7 there is antecedence for this in Claim 5, lines 18 and 19 wherein the second of said pointers is introduced.

In view of the above, the applicant requests that the rejection under 35 USC 112 be withdrawn.

The Examiner rejected Claims 1-4 under 35 USC 102(b) as being anticipated by Leung et al. Applicant respectfully traverses this rejection.

It is well settled that for a patent claim to be anticipated under 35 USC 102, a showing of identity of invention must be made, *Kalman v. Kimberly Clark Corp.*, 218 USPQ 789 CAFC 1983. Leung et al. do not satisfy this requirement.

At the outset, it should be noted that Leung et al. is assigned to the same assignee as the above entitled patent application. Leung et al. show a telephone line leading into a logger 15 and a recorder unit 14, so as to receive audio therefrom. It will be noted that there is no communication from the logger 15 to the recorder unit 14. The recorder unit 14 communicates with a message repeater 10 through a line 16. The message repeater 10 has short term memory and is able to communicate with tape recorders 26, 27 that receive cassettes.

The applicant's invention in Claims 1-4 is directed to a method of storing and retrieving audio from a digital audio logger. As stated previously, there is no data flowing from the logger 16 to the message repeater 10. Step 3 of the claim includes writing data from a buffer onto a digital audio tape. There is no digital audio tape in Leung et al. What is shown is a tape recorder for cassettes, which of course are analog. See column 3, lines 55-60. The fourth step of the claim 1 requires retrieving audio from a random access storage device while audio is written into the digital audio tape and the random access storage device. The cassettes 26, 27 of the Leung et al. receive audio from the short term memory in the console 12. Consequently it cannot be said that audio is retrieved from a random access storage device while audio is being written thereto. It will be noted that there is no provision for the same in Leung et al.

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Claim 2 includes a time defining step. Claim 3 primary and secondary partitions and claim 4 a record session of which are disclosed by Leung et al.

For the above reasons, it is submitted that Claims 1-4 are not anticipated by Leung et al. and it is requested that the rejection of these claims under 35 USC 102 be withdrawn.

Claims 5-8 were rejected under 35 USC 103 as being unpatentable over Leung et al. in view of Knittl. Applicant respectfully traverses this rejection on the part of the Examiner. The Examiner has an extensive discussion relative to audio compression, but claims 5-8 are primarily directed to a digital audio tape drive unit in communication with a buffer, which buffer communicates with the random storage device through a pair of pointers. Nothing of this nature is disclosed either by Leung et al or by Knittl. Although Knittl shows memory, there is nothing therein that is equivalent to a buffer having two pointers that have communication between a buffer and a random storage device.

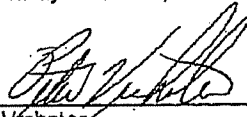
Claims 7 and 8 are more detailed relative to the structure of the buffer. More specifically, these claims speak of a primary partition and a secondary partition. Nothing of this nature is taught or suggested by either Leung et al. or Knittl.

In view of distinctions expressed above, it is submitted that Leung et al and Knittl do not show or suggest in combination the applicant's invention as defined by claims 5-8. This is particularly true when one considers the fact that Leung et al. is an analog system which cannot in any way be conveniently modified so as to incorporate any of the features of Knittl.

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In view of the above amendments and comments, the above entitled application is deemed in condition for allowance and such allowance is respectfully requested.

Respectfully submitted,



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Attorney for Applicant  
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on

6-23-94  
(Date of Deposit)

Pitney Bowes Inc.

Name of Applicant, Assignee, or Registered Pat.

Peter Vrahotes  
Signature

6-23-94  
Date

**United States Patent** [19]

Leung et al.

[11] Patent Number: 4,891,835

[45] Date of Patent: Jan. 2, 1990

[54] **METHOD AND DEVICE FOR RECORDING AND REPLAYING AUDIO COMMUNICATIONS**

[75] Inventors: Keith K. W. Leung; Kathleen Quinn, both of Norwalk, Conn.; John D. Goldson, Mt. Vernon, N.Y.; Wayne C. Hoffman, Norwalk, Conn.

[73] Assignee: Dictaphone Corporation, Stratford, Conn.

[21] Appl. No.: 857,844

[22] Filed: Apr. 30, 1986

[51] Int. Cl.<sup>4</sup> ..... H04M 1/64

[52] U.S. Cl. .... 379/88; 379/45; 379/51; 379/73

[58] Field of Search ..... 379/41, 45, 48, 51, 379/67, 84, 88, 89, 110, 73; 369/2, 14, 24, 83; 360/32

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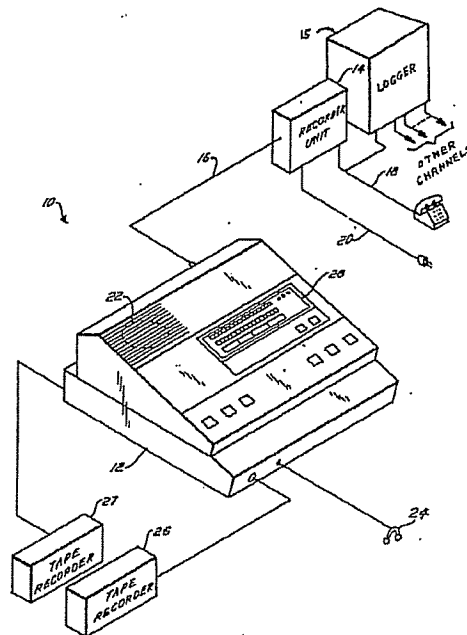
Primary Examiner—Thomas W. Brown

Attorney, Agent, or Firm—Robert H. Whisker; Melvin J. Scolnick; David E. Pitchenik

[57] **ABSTRACT**

A device according to the invention is compatible with conventional magnetic tape loggers. Such a device is termed a message repeater, and it records and replays audio signals forming messages on a message channel, such as a telephone line or a radio channel. The message repeater includes circuits for converting the audio signals on a particular channel into corresponding digital signals and circuits for storing the digital signals. The message repeater also includes circuits for selectively recalling the signals that were stored and circuits for converting the signals that were recalled into analog audio signals. Messages on the selected message channel may be recorded and later replayed by the message repeater. Preferably, the message repeater includes a display with indications of the relative locations and lengths of the stored messages as well as a cursor or index. Furthermore, the message repeater preferably permits a selected message to be saved, thereby allowing the selected message to be replayed at the convenience of the operator. Additionally, the message repeater advantageously has fault detection circuits for determining if a fault has occurred in the other circuits.

45 Claims, 12 Drawing Sheets



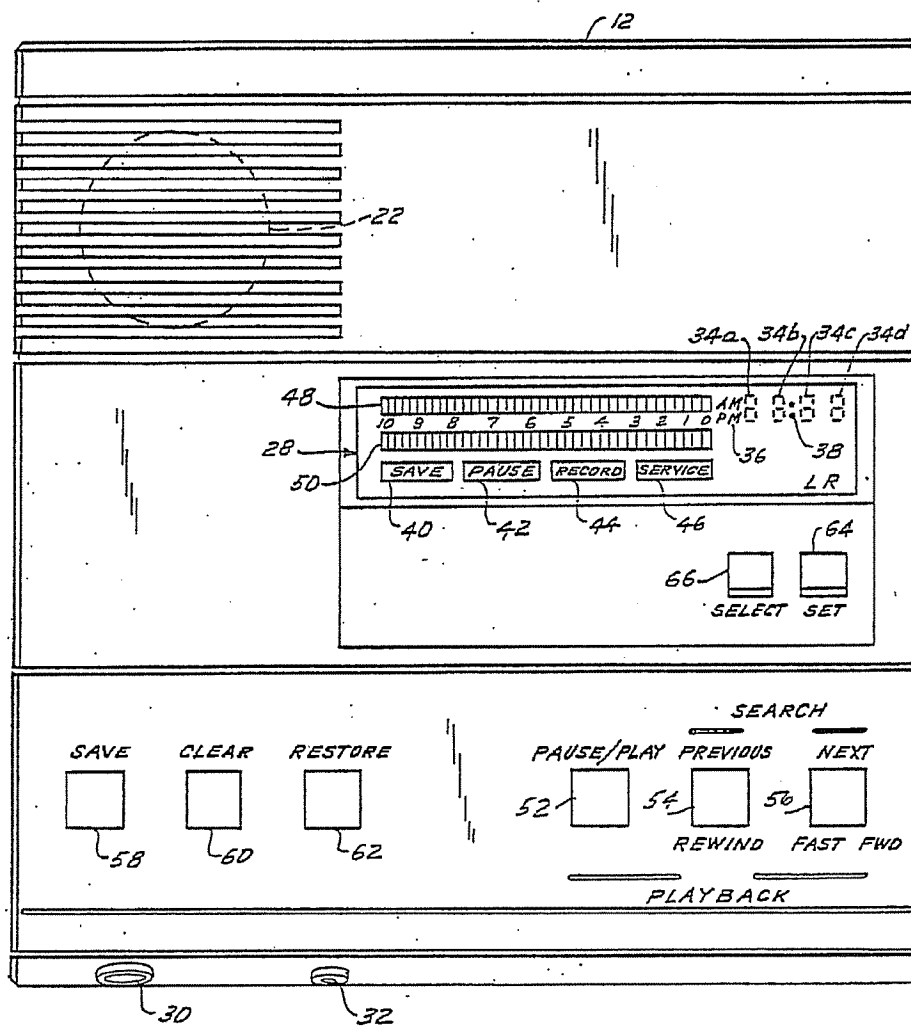


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FIG. 2

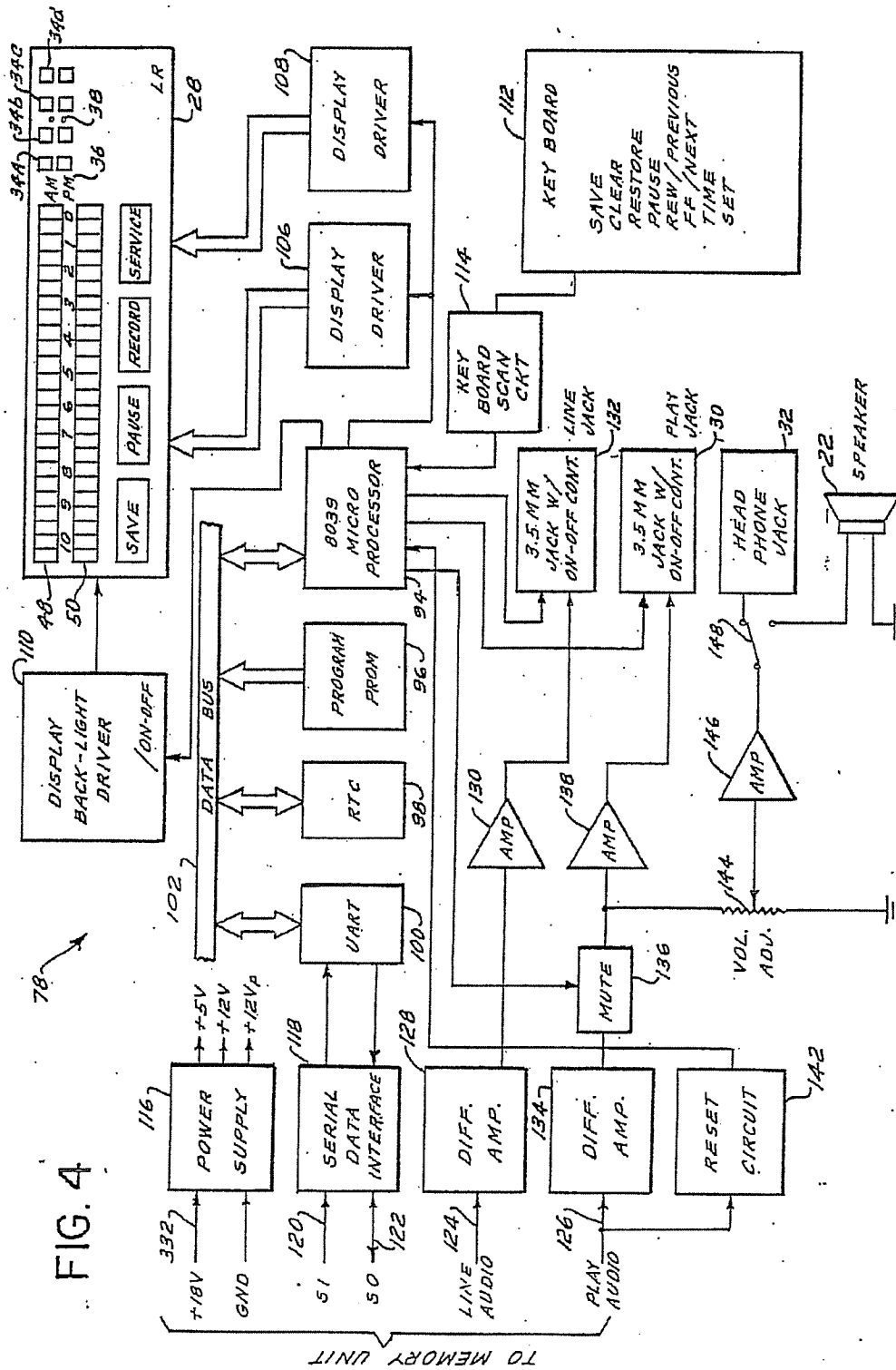


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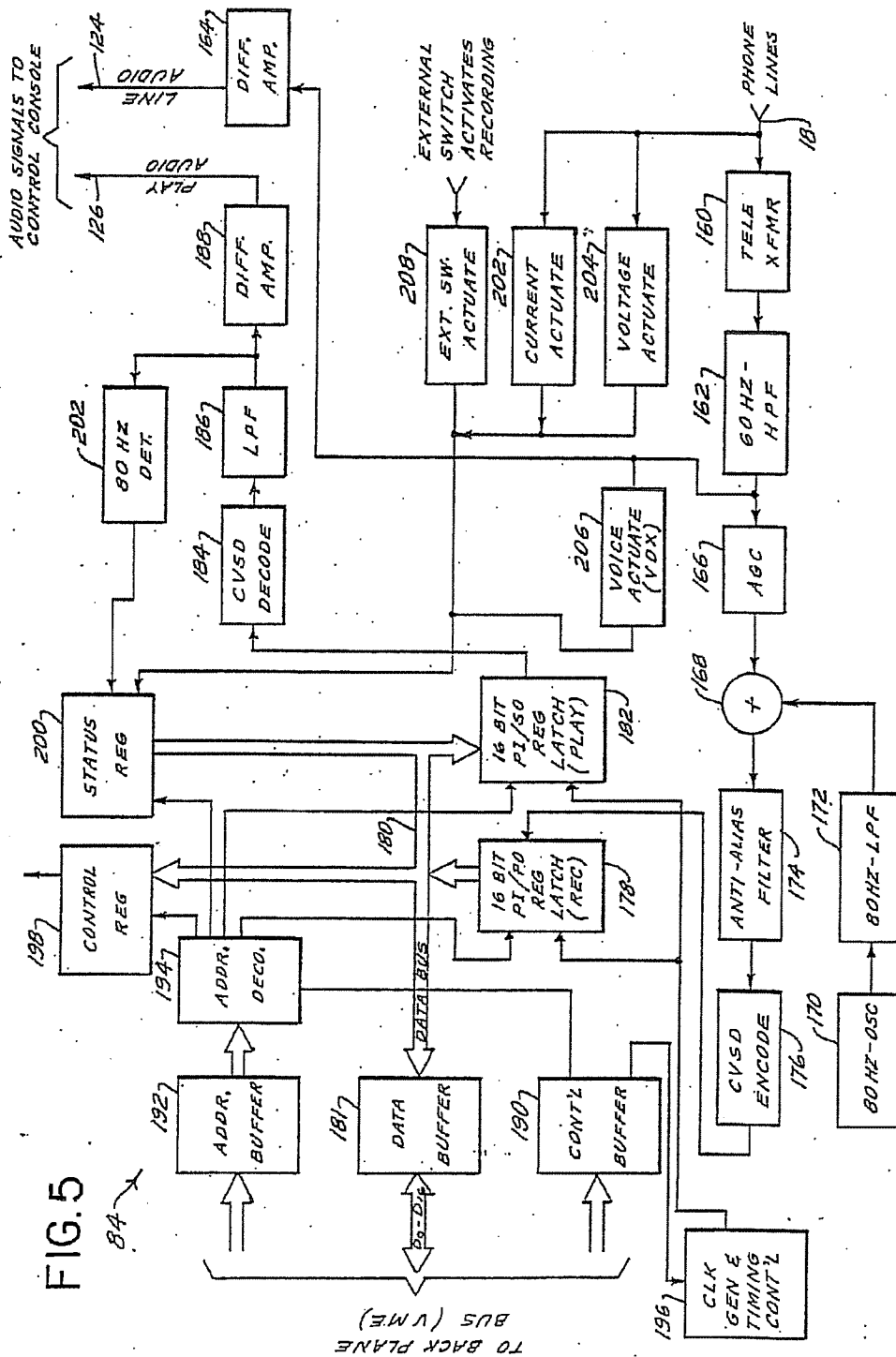
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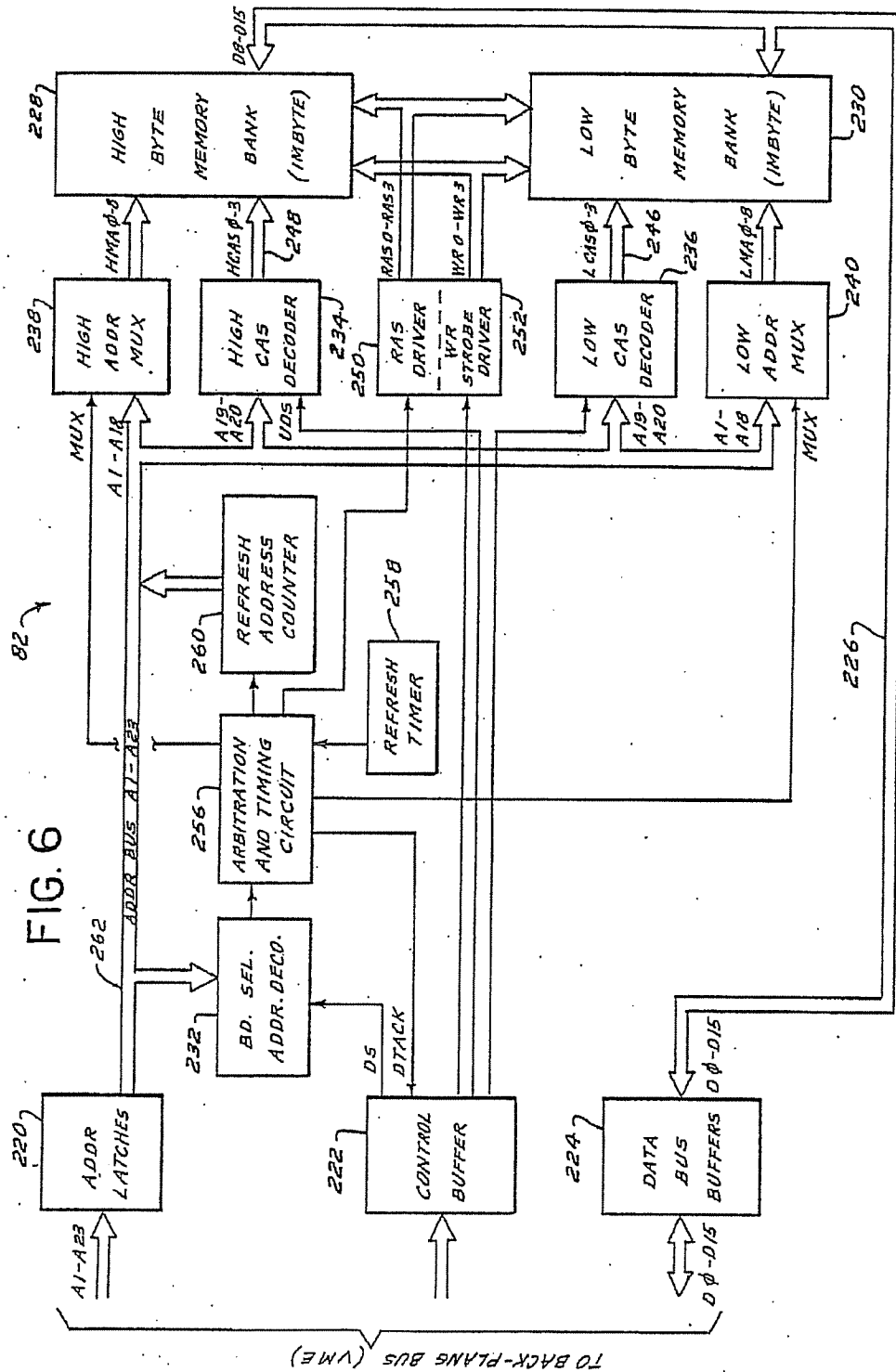


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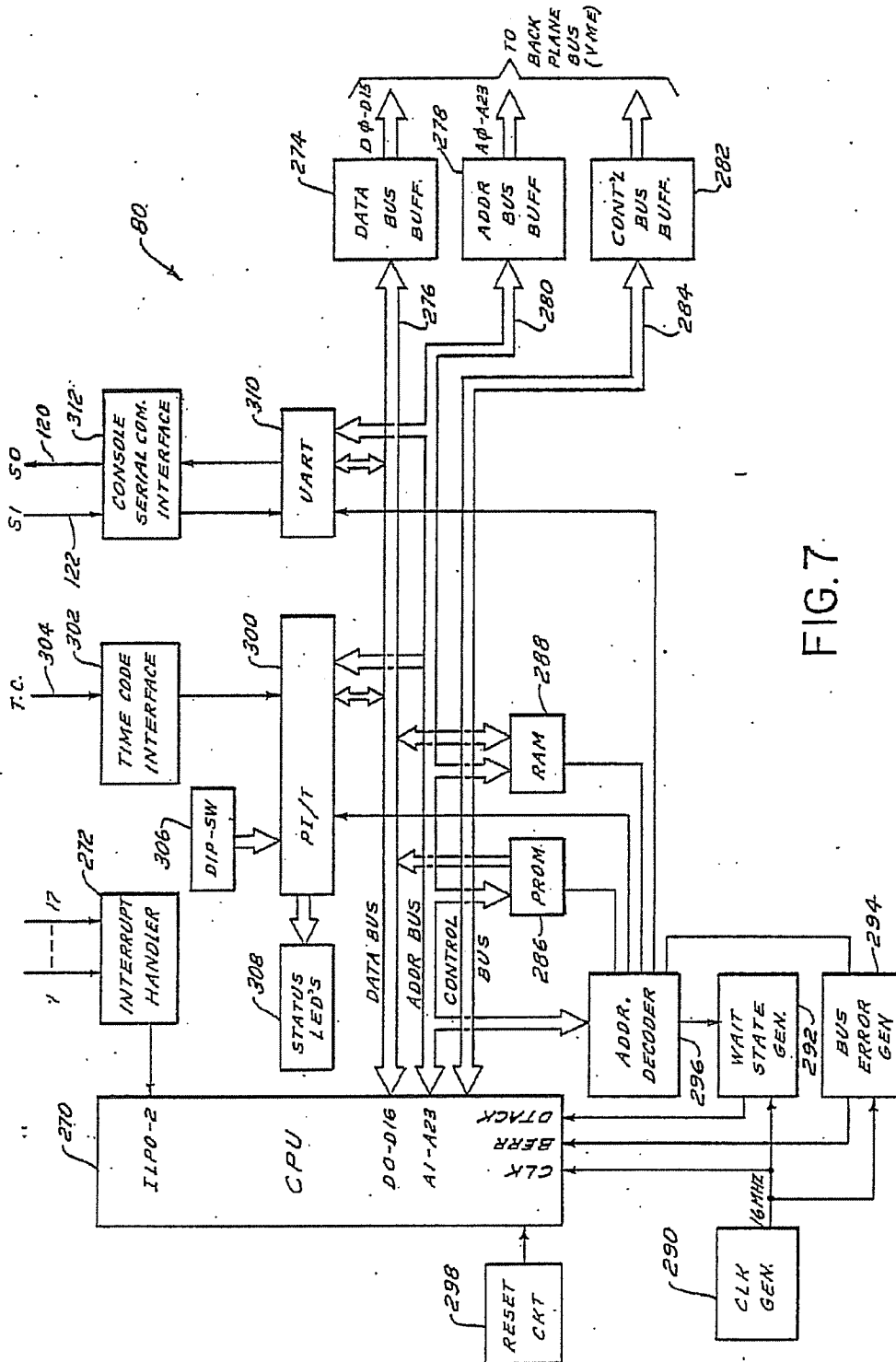


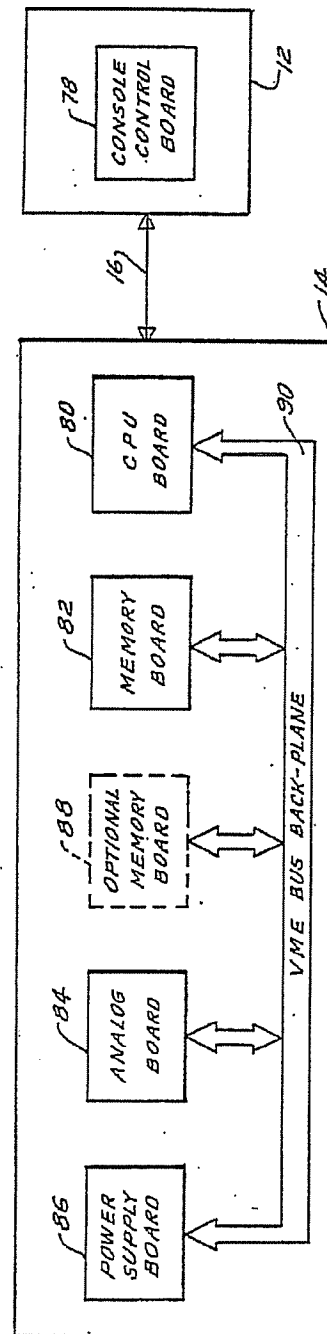
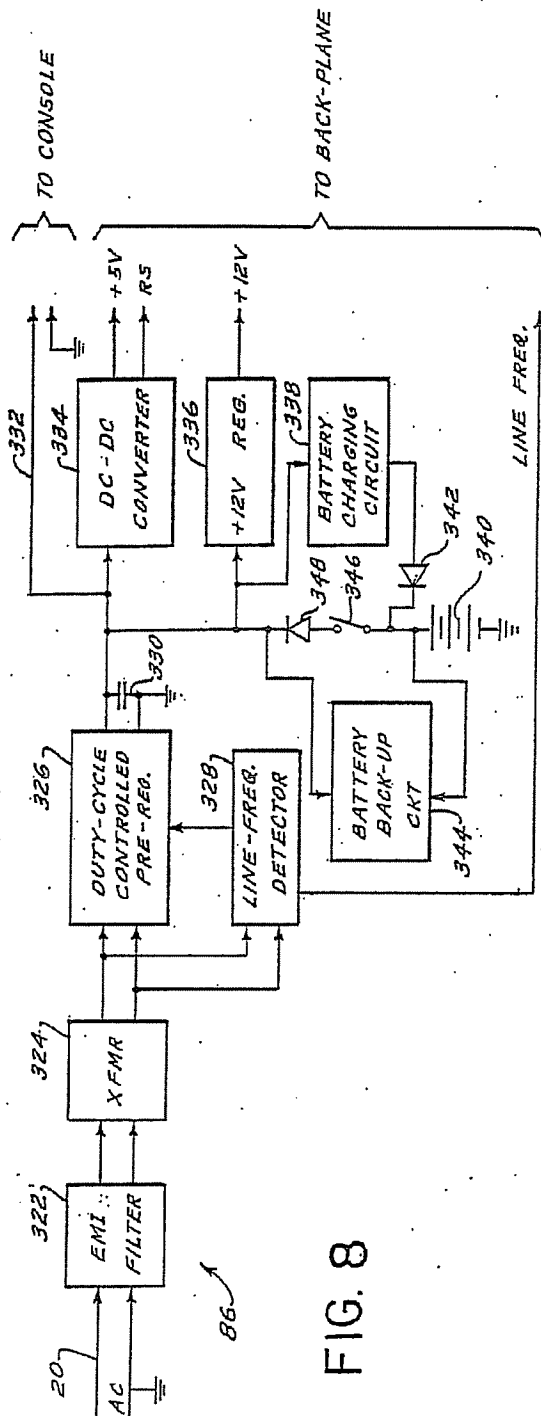
FIG. 7

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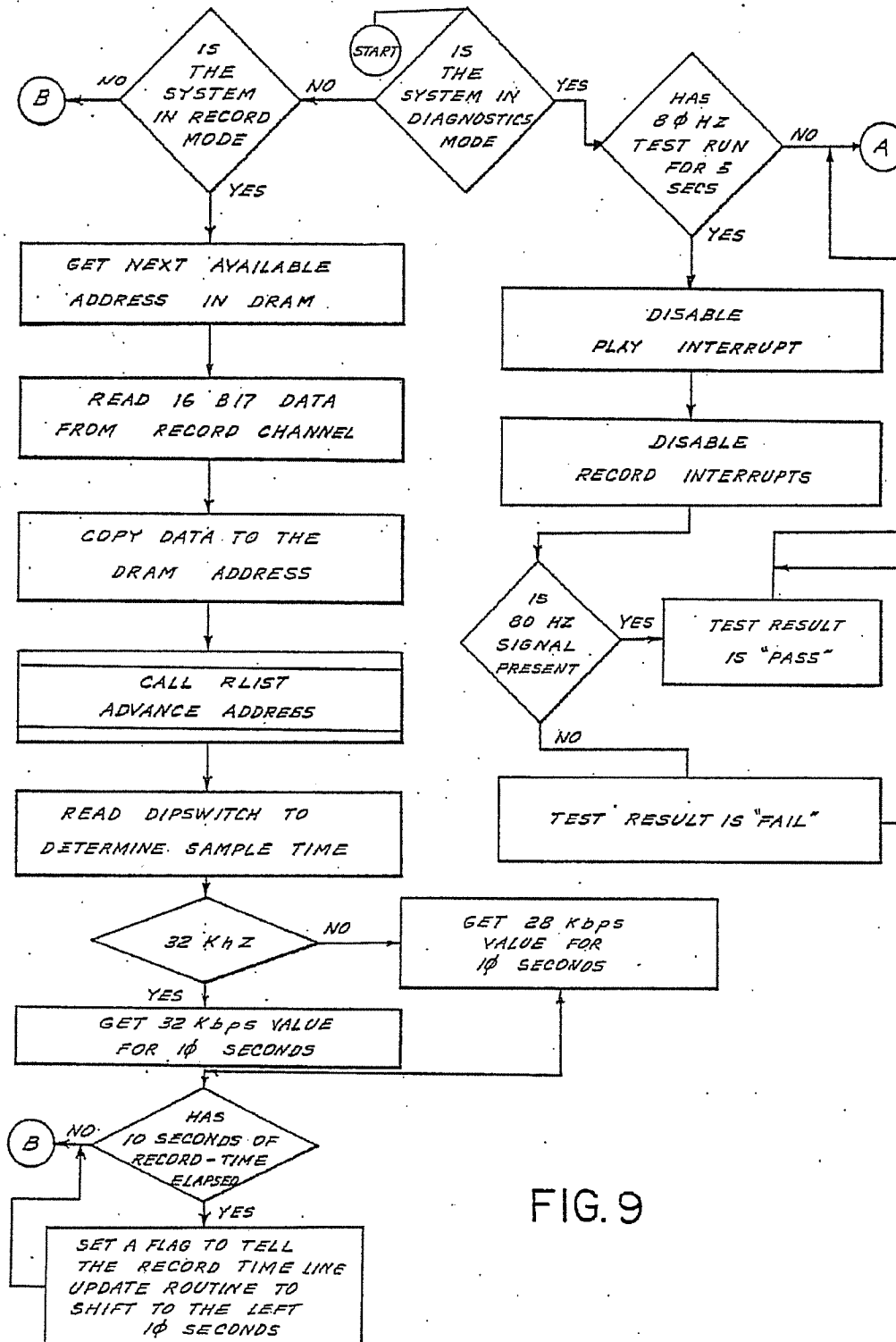


FIG. 9

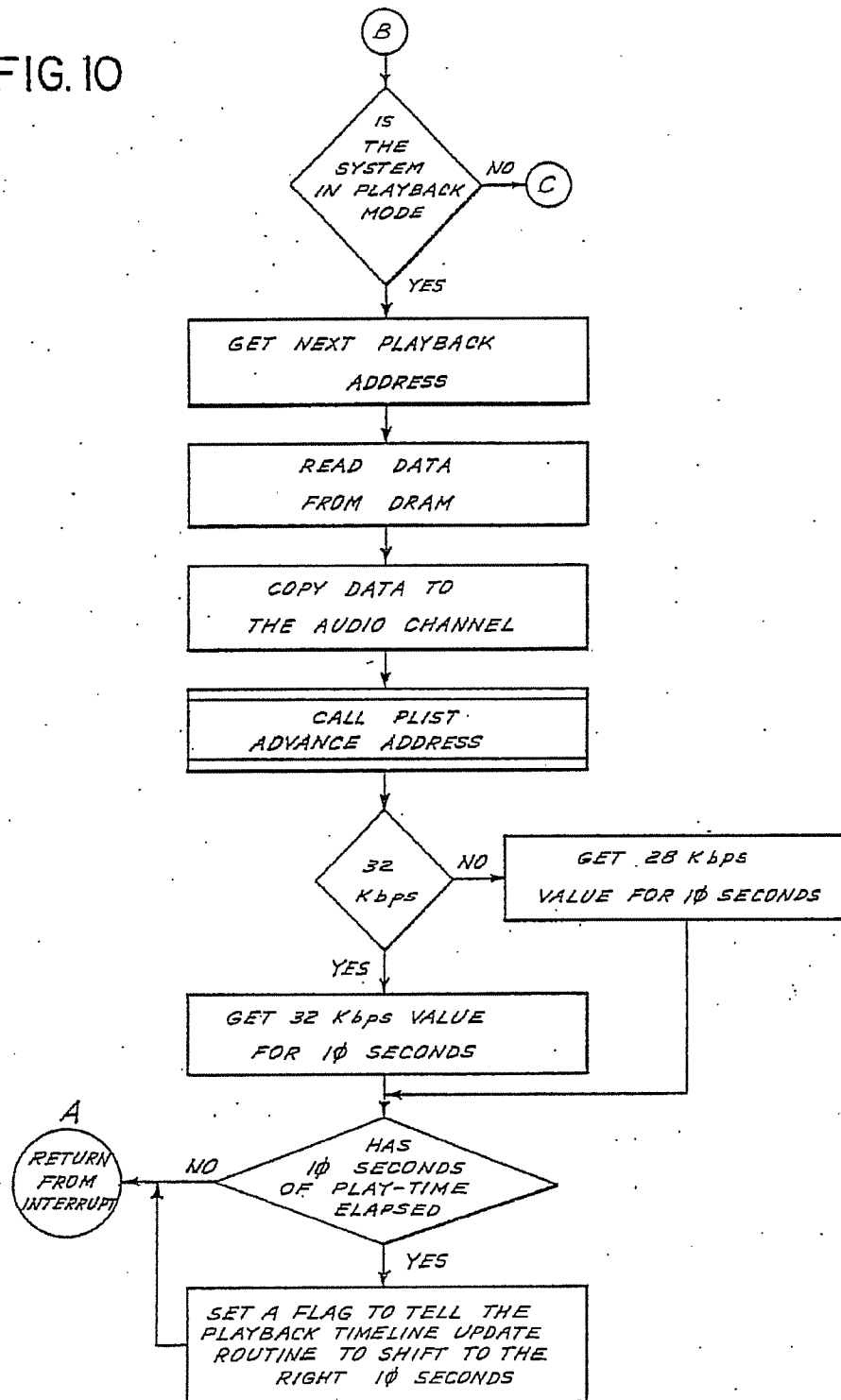
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FIG. 10



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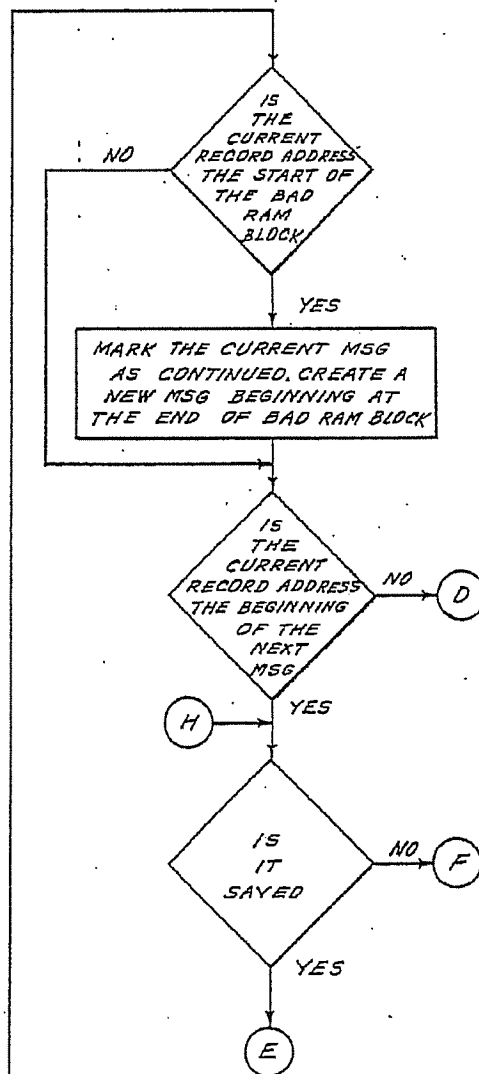
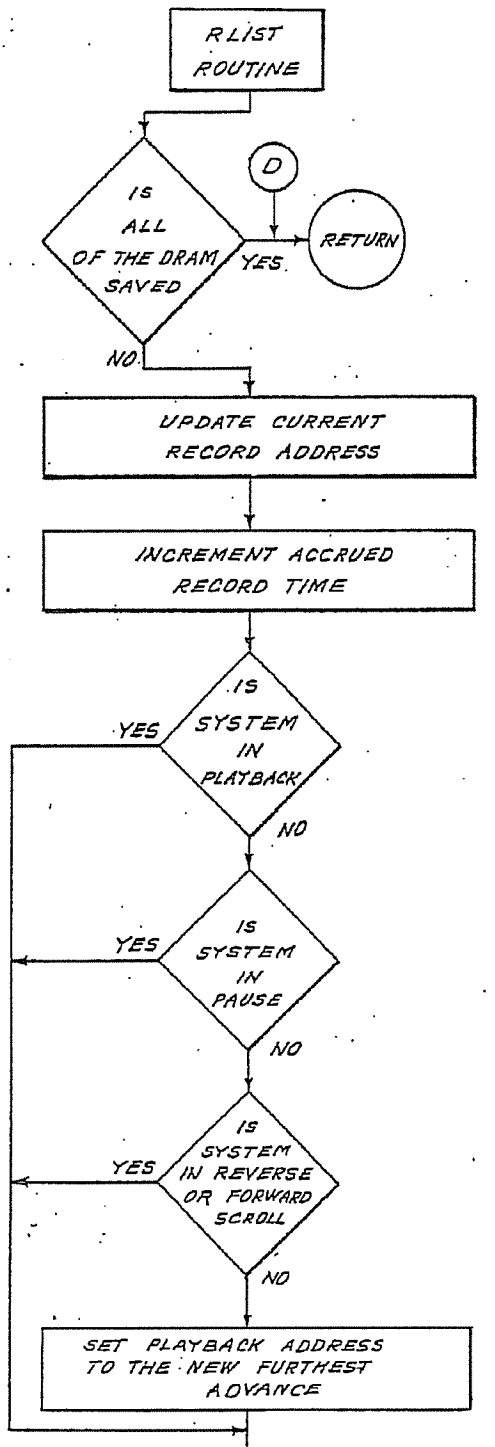


FIG. II

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FIG. 14

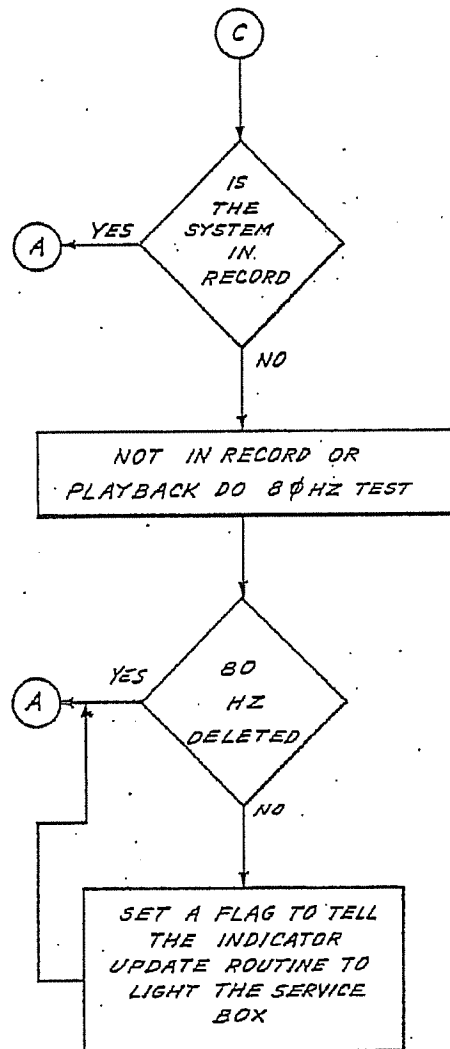
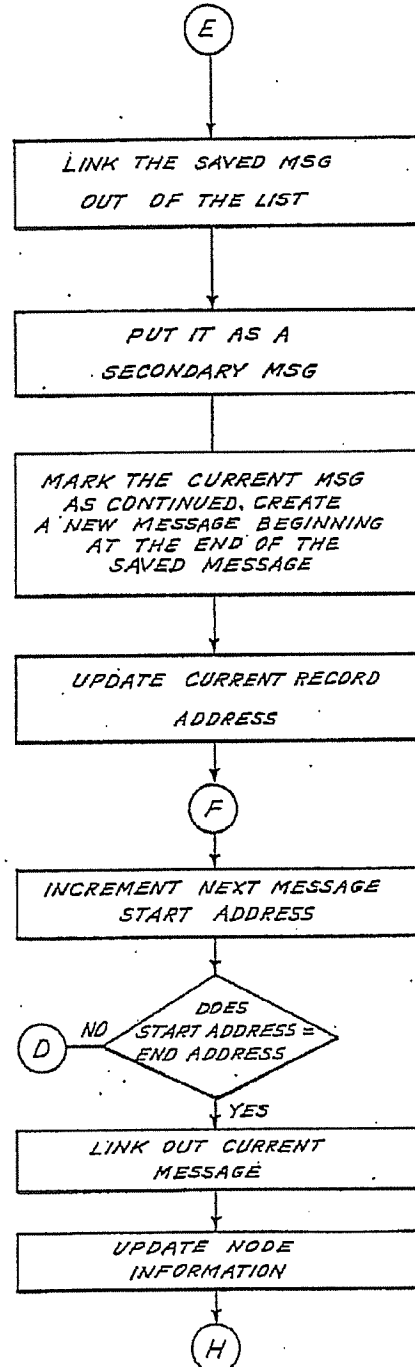


FIG. 12



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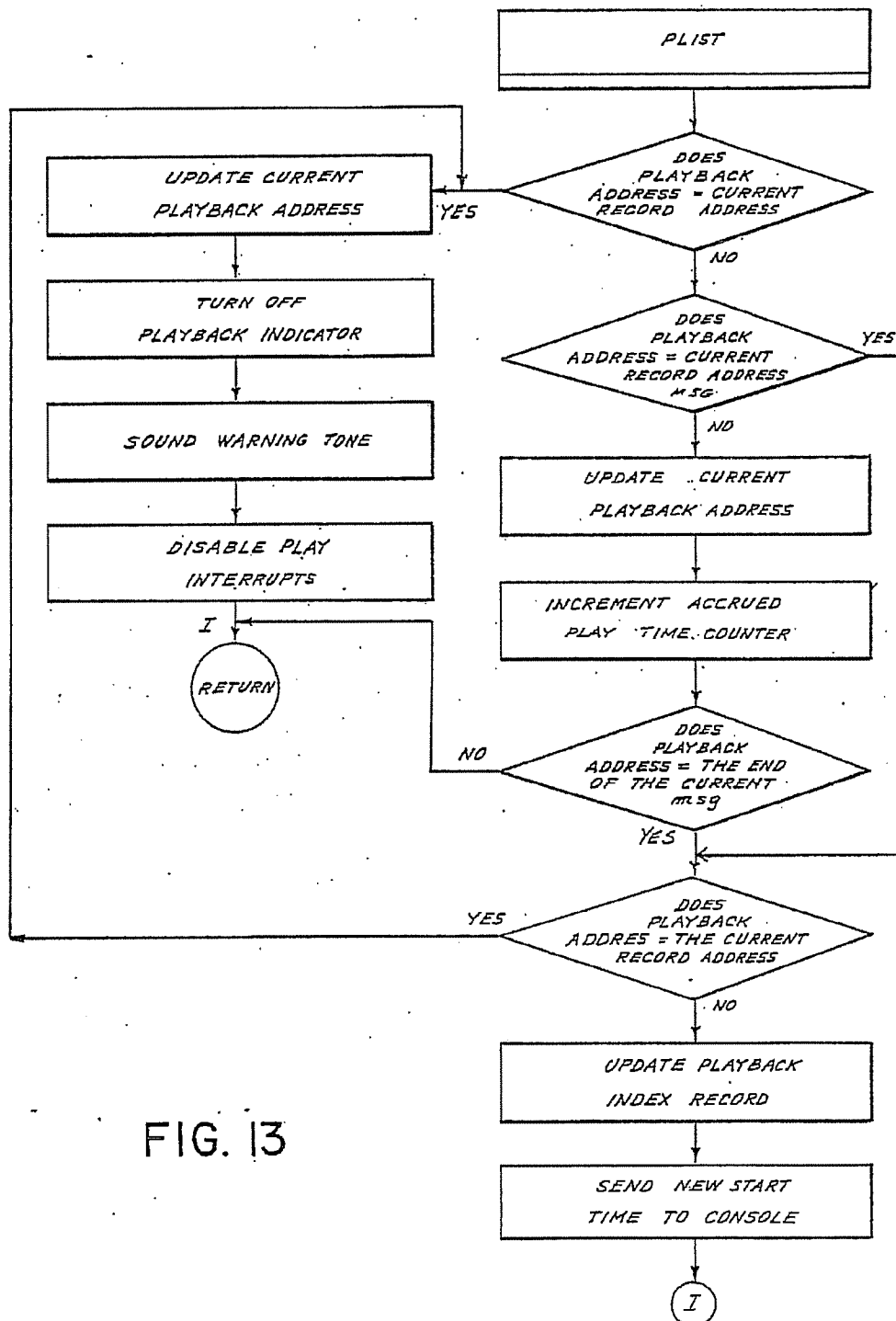


FIG. 13

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## METHOD AND DEVICE FOR RECORDING AND REPLAYING AUDIO COMMUNICATIONS

### BACKGROUND OF THE INVENTION

This invention relates, in general, to recording and replaying audio or voice communications and, more particularly, to devices and methods in which digital signals representative of messages are stored and then retrieved in order to reproduce the messages.

Typically, a magnetic tape logger is a multi-channel, reel-to-reel tape recorder that is capable of concurrently recording signals from up to about forty channels. Police and fire departments, medical emergency services, public safety services, airlines, and trucking firms, among others, may employ a magnetic tape logger. Generally, the logger will be connected to a number of telephone lines and/or a number of radio channels so that all incoming messages may be recorded. The logger may operate continuously for twelve or more hours. Once the logger is stopped, the tape may be rewound to permit a particularly important message to be replayed.

However, since the magnetic tape logger typically operates continuously for a relatively long time, a particular message may not be readily accessible by the operator or the operator's supervisor. In other words, the operator may not be able to replay a desired message until a convenient stopping point for the logger is reached. Thus, the playback of especially significant messages may be delayed.

Accordingly, a need exists for an apparatus and a method for allowing messages to be recorded and replayed when desired, without any delay. Such an apparatus may be used along with a magnetic tape logger to allow the operator to review significant messages at the operator's convenience.

### OBJECTS OF THE INVENTION

Therefore, an object of the present invention is to provide an apparatus and a method for allowing messages to be recorded and replayed when desired, without any delay.

Another object of the invention is to provide a machine for temporarily storing messages, which machine is intended to be used in parallel with a magnetic tape logger.

Yet another object of the invention is to provide a device in which a selected message may be saved and later replayed by the operator at any desirable point.

Still another object of the invention is to provide a machine having an improved display for indicating the relative locations of temporarily stored messages and/or saved messages.

An additional object of the invention is to provide an apparatus for temporarily storing messages, and saving a selected message, that includes fault detection circuits for checking various components for proper operation.

A further object of the invention is to provide a message repeater for recording and replaying recently received communications without interrupting an associated magnetic tape logger.

A still further object of the invention is to provide a device with the ability to record a message and replay a message substantially simultaneously.

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Another object of the invention is to provide a device having solid-state storage, which device is employed to record and playback telephone or radio conversations.

Various other objects, advantages and features of the present invention will become apparent from the ensuing detailed description, and the novel features will be particularly pointed out in the appended claims.

### SUMMARY OF THE INVENTION

The present invention provides a message repeater that is compatible with existing magnetic tape loggers. A message repeater according to the invention may be used together with, or in "parallel" with, such a logger. A message repeater according to the invention includes circuits for converting the audio signals on a particular message channel into corresponding digital signals and circuits for storing those digital signals. Such a message repeater also includes circuits for selectively recalling the signals that are stored and circuits for converting the signals that are recalled into analog audio signals. The analog audio signals may be sent to a speaker, a headset, or another recording device, such as a cassette recorder. Preferably, the message repeater includes a display to indicate the relative locations of messages that are stored. Furthermore, such a message repeater preferably permits a particular message to be saved, whereby the particular message may be replayed when convenient for the operator.

In accordance with another aspect of the invention, a method for recording and replaying audio signals forming messages on a message channel is provided. The audio signals on the message channel are converted into corresponding digital signals, and the digital signals are stored in a storage device, such as a dynamic random-access memory ("DRAM") or other suitable storage device. Digital signals are selectively recalled from the memory, under operator control, and the recalled signals are converted into analog audio signals. The recalled signals may be those at the beginning of a message or the recalled signals may commence at any point within the message. The steps of converting the incoming audio signals and storing the corresponding digital signals may be accomplished substantially simultaneously with the steps of recalling the digital signals and converting the digital signals into analog audio signals. Hence, a message being recorded may be replayed as it is being recorded, or one message may be recorded while another message is being replayed.

A message repeater according to the invention preferably includes a display for providing indications relating to the stored messages, such as a selectively moveable cursor or index as well as an indication of the starting point for each stored message. The operator may move the cursor to select a desired message or portion of it for reproduction. In one embodiment, the display includes top and bottom lines, each formed from a plurality of segments, the top line denoting starting points for the stored messages, and the bottom line denoting the position of the cursor. In such a display, the energized segments in the top line may move from right to left across the display, with the spacing between the energized segments representing the lengths of messages remaining constant, as additional messages are recorded. That is, the message start indications "walk" from right to left across the display as additional messages are recorded. Once the message start indications reach the left edge of the display, they "march off" the display.

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4,891,835

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## BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features, and advantages of the invention will become apparent upon consideration of the following detailed description of illustrative embodiments thereof, especially when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a diagrammatic illustration of a message repeater according to the invention;

FIG. 2 is a perspective view of the console unit for the message repeater shown in FIG. 1;

FIG. 3 is a block diagram of the message repeater shown in FIG. 1;

FIG. 4 is a block diagram of the console control board shown in FIG. 3;

FIG. 5 is a block diagram of the analog board shown in FIG. 3;

FIG. 6 is a block diagram of the memory board shown in FIG. 3;

FIG. 7 is a block diagram of the CPU board shown in FIG. 3;

FIG. 8 is a block diagram of the power supply board shown in FIG. 3; and

FIGS. 9 through 14 are flowcharts of routines carried out by microprocessors in the message repeater shown in FIG. 1.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

## General Description

Referring now to the drawings, and specifically to FIG. 1, a message repeater according to the invention is shown and designated generally by the reference numeral 10. The message repeater 10 includes a console 12 and a recorder unit 14. The recorder unit 14 is also referred to as the memory unit. The console 12 and the recorder unit 14 are connected by a line 16. Consequently, the console 12 and the recorder unit 14 may be located apart from one another. For instance, the console 12 may be conveniently positioned at the operator's station, while the recorder unit 14 may be placed in an equipment room. The message repeater 10 receives audio or voice communications over a telephone line 18. The telephone line 18 is an example of a message channel to which the message repeater 10 may be connected. The message repeater 10 may optionally be connected to receive signals from another type of message channel, such as a radio channel. The telephone line 18 is one of the telephone lines monitored by the conventional magnetic tape logger 15. The message repeater 10 receives A.C. power through a power line 20.

The console 12 has a speaker 22. The operator has the choice of listening to replayed messages through the speaker 22 or through a headset 24. The operator may connect a cassette recorder 26 to the console 12 in order to rerecord especially important messages. The use of the cassette recorder 26 to rerecord messages may be advantageous inasmuch as the recording time for the message repeater is ten minutes (or twenty minutes if an additional memory board is connected). Accordingly, the cassette recorder 26 provides further storage capacity, which may be desirable under certain circumstances.

FIG. 2 illustrates the console 12 in greater detail. The console 12 includes several buttons and a display 28. The console 12 additionally includes a jack 30 for connecting a cassette recorder and a jack 32 for connecting

a headset. Another jack, not shown, is used for connecting the message repeater to another cassette recorder 27, which is shown in FIG. 1. The cassette recorder 27 would record the incoming audio signals in parallel with the magnetic tape logger and the message repeater.

The display 28 is a liquid crystal display ("LCD"). The display 28 includes four seven-segment indicators 34a-34d, an a.m./p.m. indicator 36, and a colon indicator 38. The display 28 also includes a SAVE legend 40, a PAUSE legend 42, a RECORD legend 44, and a SERVICE legend 46. A box formed of LEDs is energized around the perimeter of a legend to denote that the associated function or mode is effective.

The box around the RECORD legend is turned on whenever a message is coming into the record channel and associated signals are being stored. The box around the PAUSE legend is turned on when the operator pushes a pause/play button 52 on the console 12. The box around the PAUSE legend is turned off when the operator subsequently pushes the pause/play button 52. The box around the SAVE legend is lit whenever a selected message is saved. The box around the SERVICE legend will be illuminated when an error or fault is detected by the on-line diagnostics for the message repeater. The on-line and off-line diagnostics are explained at length below.

The display 28 has an upper multisegment bar graph 48 with vertical bars as well as a lower multisegment bar graph 50 with vertical bars. Each of the bar graphs 48 and 50 has sixty segments. The numerals 0 through 10 are located between the upper bar graph 48 and the lower bar graph 50. The numerals 0 through 10 are legends on the display 28.

The upper bar graph 48 is called the message index timeline. This timeline shows the relative locations and lengths of stored messages. Each of the sixty segments of the message index timeline 48 corresponds to ten seconds of record time. Thus, the entire message index timeline corresponds to ten minutes of record time, which is the nominal storage capacity of the message repeater. If the message repeater is equipped with the optional memory board to increase the storage capacity to twenty minutes, the message index timeline 48 displays the latest ten minutes of recorded messages.

At the start of message recording, the right-most timeline segment is illuminated on the message index timeline 48. For each ten seconds that pass during message recording, the left adjacent segment is illuminated.

The lower bar graph 50 is called the playback index timeline, and it shows the specific point within the message that is being recalled and played back. One of the sixty segments of the playback index timeline is energized to denote the position of an index or cursor. Every ten seconds during playback, the cursor moves to the right by one segment. A message can be recalled from its beginning or from any point between its beginning and its end. That is, all or part of a message may be "rewound" and then played back. The cursor of the playback index timeline 50 is controlled by buttons on the console 12, which are described below.

A pause/play button 52, a previous/rewind button 54, and a next/fast-forward button 56 are provided to permit the operator to control the position of the cursor and, therefore, the playback of messages. Momentary actuation of the pause/play button 52 stops playback of the accessed message. Another actuation of the pause/play button 52 causes playback of the accessed message to continue. When the pause/play button 52 is pressed,

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the box around the PAUSE legend is energized, and a message pause marker is energized on the display 48. The message pause marker indicates the location of the pause within the message being replayed. The pause function is cleared by depressing the pause/play button 52 a second time or by pressing the previous/rewind button 54 or the next/fast-forward button 56. Furthermore the pause function is cleared by pressing the restore button 62, which resets the cursor to its farthest advance point, i.e., to the rightmost segment of the playback index timeline 50.

If the previous/rewind button 54 is pressed and released within one second, the newest complete message is played back from its beginning. If the previous/rewind button 54 is again pressed and released within one second, the second newest complete message is played back from its beginning. Similarly, if the previous/rewind button 54 is again pressed and released within one second, the third newest complete message is played back from its beginning. In this fashion, the previous/rewind button may be employed to step the cursor from right to left to access any previously recorded message from its starting point. When a message is accessed or played back, the time associated with the beginning of that message is displayed by the seven-segment indicators 34a-34d. A nonblinking colon on the colon indicator 38 signifies that the displayed time is not the current time.

If the previous/rewind button 54 is pressed and held for longer than one second, the cursor continuously decrements, i.e., moves from right to left along the playback index timeline 50. An audible tone is generated as each message start boundary is passed. When the previous/rewind button 54 is released, the message repeater automatically goes into the play mode. Then, the message is replayed from the point determined by the cursor. Thus, any previously recorded message may be played back from its beginning or from any point between its beginning and its end.

If the next/fast-forward button 56 is pressed and released within one second, the next newest message is played back. This function operates only if at least one message has been accessed in the reverse direction, namely, to the left along the message index timeline 48. If the next/fast-forward button 56 is pressed while the cursor is at its farthest advance point, the message repeater will disregard this command. If the cursor is at its farthest advance point, and the message repeater is in the record mode, the incoming audio signals will be played back as they are received once the next/fast-forward button 56 is pressed and released within one second.

Assume that the cursor is positioned near the left boundary of the playback index timeline 50. The next/fast-forward button 56 may be pressed to move the cursor to the beginning of the next newest message, specifically, to move the cursor to the message start point for the first message to the right of the cursor. If the next/fast-forward button 56 is again pressed, the cursor moves to the beginning of the next newest message, namely, to the message start point for the second message to the right of the cursor's original position. Accordingly, the next/fast-forward button 56 may be pressed to step the cursor from message to message until the cursor reaches its farthest advance point, i.e., the rightmost segment of the playback index timeline 50.

If the next/fast forward button 56 is pressed and held for longer than one second, the cursor continuously

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increments, i.e., moves from left to right along the playback index timeline 50. An audible tone is generated as each message start boundary is passed. When the next/fast forward button 56 is released, the message repeater automatically goes into the play mode. Then, the message is replayed from the point determined by the cursor. The next/fast-forward button 56 is deactivated when the farthest advance point for the cursor is reached. At the farthest advance point, a continuous tone is generated until the next/fast forward button 56 is released.

If the save button 58 is pressed while the cursor on the playback index timeline 50 is within a message boundary on the message index timeline 48, the message repeater prevents that message from being erased. That is, the message repeater "write protects" the stored signals associated with the selected message. This feature allows an operator to refer back to the saved message without losing the information by having it recorded over. Only one message may be saved at any time, but the saved message may be stored for an indefinite period. The section of memory used for the saved message is dedicated for storage alone and cannot be used to write other information until the save message feature is cancelled. Accordingly, the length of recording time for other incoming messages is reduced by the length of the saved message. For example, if the saved message is two minutes long, the total remaining recording time for other incoming messages is reduced by two minutes. The length of the saved message is displayed on the message index timeline 48 by energizing all segments associated with the saved message.

Only one message may be saved at any time, as noted above. If a message has already been saved and the cursor on the playback index timeline 48 is within the boundary of another message, as shown by the message index timeline 50, actuation of the save button 58 will result in a playback of the saved message. When the save button 58 is pressed, the rectangular element around the SAVE legend is energized.

Once a message has been saved, the clear button 60 may be pressed to cancel the saved message feature. In order to prevent the inadvertent cancellation of this feature, however, the clear button 60 must be pressed and held for longer than one second in order to cancel the saved message feature.

The message repeater stores signals corresponding to messages in a so-called wraparound memory. (By "wraparound storage" herein is meant storage in a memory of predetermined size of a portion or portions of the audio signal previously recorded by a logger in such a manner that when the memory capacity is exceeded and additional signal is to be stored the oldest stored signal is deleted to provide room for the current signal.) Normally, data is stored starting with a certain location and continuing until the storage capacity of the memory is reached. At this point, subsequently received data is stored beginning with the starting location. In other words, after data is stored in the last memory location, new or fresh data is stored in the first and following locations. Hence, the new data is written over the old data, and the old data is lost. Consequently, if the message repeater has storage capacity for ten minutes of messages and more than ten minutes of messages are recorded, the oldest messages, or portions of them, are lost. Actuation of the save button 58 institutes write protection for the data associated with the saved message. Actuation of the clear button 60 removes the write

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protection for the data associated with the saved message.

When the clear button 60 is pushed, the rectangular element around the SAVE legend is deenergized. In addition, the segments of the message index timeline 48 corresponding to the previously saved message are deenergized as fresh data is written in the corresponding memory locations. The bar segments of the previously saved message appear to "walk" to the left. Full memory restoration is indicated when all of the bar segments are deenergized. Another message may not be saved until full memory restoration occurs. If the clear button 60 is pressed (and the write protection for a saved message is removed) and ten or fewer minutes of recording time have elapsed, the write protection for the previously saved message, or what remains of it, may be reinstituted by pressing the save button 58.

The restore button 62, when actuated, causes a playback or a pause to be cancelled. In other words, when the restore button 62 is pressed, the cursor is set to its farthest advance point on the playback index timeline 50, and the current pause or playback is cancelled.

The set button 64 and the select button 66 are employed in a conventional manner to set the time of day on the seven-segment indicators 34a-34d.

#### Block Diagrams

FIGS. 3 through 8 are block diagrams for a message repeater according to the invention. FIG. 3 is an overall block diagram for the message repeater and shows the console 12 connected to the recorder unit 14 by the line 16. The console 12 may be located up to 300 feet away from the recorder unit 14.

The console 12 has a console control board 78, while the recorder unit 14 includes a CPU board 80, a memory board 82, an analog board 84, and a power supply board 86. The recorder unit 14 may include an optional memory board 88. The optional memory board 88 doubles the storage capacity of the recorder unit 14 from ten minutes of recorded information to twenty minutes of recorded information. Thus, messages may be recorded for twice as long if both memory boards 82 and 88 are used than if only the

memory board 82 is used. The boards 80-88 are connected by a VME bus along the blackplane of the recorder unit 14. The boards 78-88 are discussed in greater detail below during the descriptions of FIGS. 4 through 8.

FIG. 4 is a block diagram of the console control board 78 for the console 12. The console control board 78 includes a microprocessor 94, such as an Intel model number 8039 microprocessor. The microprocessor 94 is connected to a program PROM 96, a real time clock 98, and a universal asynchronous receiver-transmitter ("UART") 100 through a data bus 102. The microprocessor 94 controls the display 28 through display drivers 106 and 108 as well as through a back light driver circuit 110. Keyboard operation or initiation of the record mode causes the microprocessor 94 to recognize the operator's need to observe the display. Accordingly, the microprocessor 94 causes the back light driver circuit 110 to turn on the back light for the LCD display 28. The back light for the LCD display 28 is turned on and off in order to save power and lengthen the life of the display.

The microprocessor 94 determines whether any buttons have been pressed by scanning the keyboard 112 through a keyboard scan circuit 114. The keyboard scan is accomplished by matrix scanning.

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A power supply circuit 116 in the console control board 78 receives a +18 volt D.C. signal from the power supply board 86 of the recorder unit 14. The power supply circuit 116 converts the +18 volt D.C. signal from the power supply board 86 into +5 volt D.C. and +12 volt D.C. signals, which are supplied to the various components on the console control board 78.

The UART 100 is used to facilitate the transfer of information between the microprocessor 94 on the console control board 78 and the microprocessor on the CPU board 80. The UART 100 sends data to and receives data from a differential transceiver 118. The differential transceiver 118 is a conventional differential serial data interface. The differential transceiver 118, in turn, receives data from and delivers data to the CPU board 80 over a serial input ("SI") line 120 and a serial output ("SO") line 122, respectively.

The console control board 78 receives audio signals from the analog board 84 in the recorder unit 14. There are two audio channels: the playback channel and the record channel. The playback channel is used for replaying information that has been recorded, while the record channel is used for recording incoming information. The record channel is also known as the line channel because it is connected to the incoming signals on the telephone line.

The analog board 84 supplies a record audio signal over a line 124. The record audio signal is also referred to as the line audio signal. Furthermore, the analog board 84 provides a playback audio signal over a line 126. The record audio signal is initially sent through a differential receiver circuit 128 and subsequently sent through an amplifier 130 to a jack 132. The jack 132 is called the line jack. Another recording device, such as a cassette recorder, may be connected to the line jack 132 in order to record conversations as they take place.

The playback audio signal is initially sent through a differential receiver circuit 134, through a mute circuit 136, and subsequently through an amplifier 138 to the jack 30. The jack 30 is known as the play jack. Another recording device, such as a cassette recorder, may be connected to the play jack 30 in order to record messages, e.g., particularly important messages, as they are replayed. In addition, the playback audio signal is sent through a reset circuit 142 to the microprocessor 94. The microprocessor 94 controls the mute circuit 136 to prevent any signals at its input from reaching its output when the message repeater is not in the play mode.

A volume adjust potentiometer 144 is connected between the mute circuit 136 and the amplifier 138. The output signal from the volume adjust potentiometer 144 is delivered to an amplifier 146, which supplies an amplified signal to either the speaker 22 or the headphone jack 32. The signals on the playback audio line will be heard by the operator through the speaker 22, unless he or she plugs headphones into the headphone jack 32, which causes a switch 148 to deliver the audio signals to the jack 32 rather than the speaker 22. Consequently, the operator may listen to replayed messages through the speaker 22 or through headphones, depending on his or her wishes.

FIG. 5 is a block diagram of the analog board 84 for the recorder unit 14. The analog board 84 receives audio signals over the telephone line 18. The telephone line 18 is one of the forty or more lines connected to the associated magnetic tape logger. The message repeater may be dedicated to a particular telephone line or radio

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channel. Alternatively, the message repeater may be switched from line to line or from channel to channel with a suitable switching device. The operator, therefore, may record messages from several different message channels by selectively changing the connection of the input line to the message repeater.

The audio signals on the telephone line 18 are delivered to a transformer 160, which provides isolation for the audio signals. Then, the audio signals are sent to a 60-Hz high-pass filter 162, which filters out any 60-Hz signals on the telephone line 18. The output signal from the 60-Hz high-pass filter 162 is delivered to a differential line driver amplifier 164. The output signal from the differential line driver amplifier 164 is the record audio signal. The record audio signal travels over the line 124 to the console control board 78 (FIG. 4). The output signal from the 60-Hz high-pass filter is also delivered to an automatic gain control ("AGC") amplifier 166. The AGC amplifier 166 is used to compress the signal quickly. The AGC amplifier 166 has a full-wave rectifier which converts the input A.C. signal into a D.C. signal. The output signal from the AGC amplifier 166 is sent to a summing amplifier 168. The other input of the summing amplifier 168 is supplied by an 80-Hz oscillator 170 through an 80-Hz low-pass filter 172. The 80-Hz oscillator 170 produces a square wave, and the 80-Hz low-pass filter 172 is a fundamental frequency filter. That is, the 80-Hz low-pass filter 172 permits only an 80-Hz sine wave to travel through it. The function of the 80-Hz signal will be described in greater detail below.

The output signal from the summing amplifier 168 is supplied to an anti-alias filter 174, which removes high-frequency distortion from the signal. The output signal from the anti-alias filter 174 is furnished to a continuously variable slope delta ("CVSD") encoder 176. A conventional CVSD encoder, such as the Harris model number 55564 encoder, may be employed. The CVSD encoder 176 converts the audio signal into serial digital data. The user has the option of selecting a 28 Kbit/second conversion rate or a 32 Kbit/second conversion rate.

The serial digital data from the CVSD encoder 176 is supplied to a 16-bit serial in/parallel out register latch 178. The register 178 is part of the record channel, as is the CVSD encoder 176. The digital data from the register 178 is supplied through a data bus 180 to a data buffer 181. Then, the digital data is sent through the data bus on the backplane to the memory board 82 (FIG. 6) and stored in the memory. Accordingly, audio signals on the telephone line 18 are converted into corresponding digital signals, which are stored in the memory, and which may be recalled in order to reproduce the audio signals.

FIG. 5 depicts the circuits used to reproduce the audio signals. Digital data is read from the memory and supplied through the data bus on the backplane to the data buffer 181. From the data buffer 181, the digital signals are supplied over the data bus 180 to a 16-bit parallel in/serial out register latch 182. The register 182 is part of the playback channel. The register 182 supplies serial output data to a CVSD decoder 184. The CVSD decoder 184 is part of the playback channel. The conversion rate of the CVSD decoder 184 matches the conversion rate of the CVSD encoder 176. The CVSD decoder 184 converts the input digital data into analog audio signals. The analog audio signals from the CVSD decoder 184 are sent through a low-pass filter 186 to a

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differential line driver amplifier 188. The output signal from the differential line driver amplifier 188 is the playback audio signal, which is transmitted to the console control board 78 (FIG. 4) over the line 126. In this manner, digital signals may be recalled from the memory and converted into analog audio signals. Thus, messages may be recorded and later replayed utilizing solid-state storage.

Control signals are supplied to the analog board 84 through the control bus on the backplane. The control signals are received by a control buffer 190. Similarly, address signals are supplied over the address bus on the backplane to an address buffer 192. The address buffer 192 then delivers the address signals to an address decoder 194. The control buffer 190 supplies control signals to the address decoder 194 and to a clock generator and timing control circuit 196. As mentioned above, the user has the ability to select the rate at which the incoming analog audio signals are encoded into digital signals and, correspondingly, the rate at which the recalled digital signals are decoded into outgoing analog audio signals. A signal indicative of the desired conversion rate is supplied by the clock generator and timing control circuit 196 to each of the registers 178 and 182. The address decoder also supplies signals to each of the registers 178 and 182. These signals from the address decoder 194 function to select each register independently for the CPU to access. The address decoder 194 supplies selected signals to the control register 198 as well as the status register 200. The signals from the address decoder function to select each register independently for CPU to access, to write control information to the control register, and to read status information from the status register.

An 80-Hz detector 202 is connected to the output of the low-pass filter 186. The 80-Hz detector 202 together with the 80-Hz oscillator 170 and the 80-Hz low-pass filter 172 are employed to check the audio circuitry of the message repeater. An 80-Hz signal from the 80-Hz oscillator 170 is introduced into the system at the summing amplifier 168. The 80-Hz signal is subsequently encoded by the CVSD encoder 176 and supplied to the memory, where it is stored. Later, the corresponding digital signals are read from the memory and decoded by the CVSD decoder 184. Accordingly, the presence of the 80-Hz signal indicates that the audio circuitry is operating satisfactorily, while the absence of the 80-Hz signal indicates that a fault exists in the audio circuitry. The 80-Hz detector 202, therefore, supplies a signal indicative of proper operation to the status register 200.

The status register 200 further receives a signal that tells the CPU to activate the record circuitry. This signal may be provided by, for example, a current actuation circuit 202 or a voltage actuation circuit 204 to detect an off-hook condition on the telephone line 18. In addition, a voice actuation ("VOX") circuit 206 may be used to detect the presence of audio signals on the telephone line 18 and activate the record circuitry. As another example, the user may furnish an external switching device for producing the signal which activates the record circuitry. The external switching device is diagrammatically shown by the block 208. Other techniques may be adopted to produce this signal. During installation, the user selects which circuit or device will be used to actuate the record circuitry.

FIG. 6 is a block diagram of the memory board 82 for the recorder unit 14. Address signals are supplied over the address bus on the backplane to address latches 220

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Similarly, control signals are supplied to a control buffer 222 through the control bus on the backplane. Data bus buffers 224 receive data from either the data bus on the backplane or the data bus 226 on the memory board 82. A high byte memory bank 228 and a low byte memory bank 230 supply data to and receive data from the data bus buffers 224 through the data bus 226.

The high byte memory bank 228 and the low byte memory bank 230 comprise the main storage where the processed voice data is stored. The storage devices employed are eight 256 Kbyte dynamic random access memory modules ("DRAMs"). Four 256 Kbyte modules are located in the high byte memory bank 228 and four 256 Kbyte modules are located in the low byte memory bank 230. The total capacity on the memory board 82, therefore, is two megabytes, which corresponds to ten minutes of recorded information. If the optional memory board 88 is utilized, the message repeater has the capacity to record twenty minutes of information.

During a memory write operation, 16 bits are written into the DRAM. Similarly, during a memory read operation, 16 bits are read out from the DRAM. One byte from the high byte memory bank 228 and one byte from the low byte memory bank 230 together make up the 16 bits. Thus, one address on the address bus accesses one byte in the high byte memory bank 228 and one byte in the low byte memory bank 230.

The control buffer 222 provides several control signals to the components on the memory board 82. The control buffer 222 supplies a data strobe ("DS") signal to a board select or address decoder circuit 232. In addition, the control buffer 222 delivers an upper data strobe ("UDS") signal to a high column address strobe ("CAS") decoder 234 and a lower data strobe ("LDS") signal to a lower CAS decoder 236. Because of the relatively large amount of memory provided by the DRAM, two address multiplexers are employed. A high address multiplexer 238 provides address information to the high byte memory bank 228, while a low address multiplexer 240 provides address information to the low byte memory bank 230.

The row address strobe ("RAS") lines 242 control the row address of the DRAM, while the column address strobe ("CAS") lines 246 and 248 control the column address of the DRAM. A row address driver 250 supplies the row address signals to the row address strobe lines 242. A write strobe driver 252 supplies read/write signals to the read/write control lines 254. The signals on the read/write control lines 254 determine whether data is being read from or written to the DRAM.

In order to access a memory location, the CPU board 80 (FIG. 5) provides an address to the address latches 220 through the address bus on the backplane. The CPU board 80 supplies an address strobe ("AS") signal, which latches the address into the address latches 220. Next, the CPU board 80 furnishes the data strobe ("DS") signal to the control buffer 222 through the control bus on the backplane. The control buffer 222 then delivers the data strobe signal to the board select circuit 232. This circuit determines if the DRAM on this particular memory board has been selected. That is, it ascertains whether this particular memory board has been accessed for a read or write operation. This circuit permits the optional memory board 88 to be included in the message repeater.

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Assuming that the DRAM in this particular memory board has been selected, the board select circuit 232 supplies a signal to an arbitration and timing circuit 256. If a memory refresh cycle (discussed below) is not occurring, the arbitration and timing circuit 256 causes the row address strobe driver 250 to supply a row address signal on the lines 242 to the DRAM. Next, the arbitration and timing circuit 256 delivers control signals to the high address multiplexer 238 and the low address multiplexer 240. The control buffer 222 delivers control signals to the high column address strobe decoder 234 and the low column address strobe decoder 236. The column address strobe decoders 234 and 236 then supply a column address signal to the DRAM. As noted before, the write strobe driver 252 furnishes a signal which determines whether data is read from or written to the DRAM.

The arbitration and timing circuit 256 then sends a data transfer acknowledge ("DTACK") signal to the control buffer 222, which supplies the DTACK signal to the CPU board 80 (FIG. 7) through the control bus on the backplane. Once the CPU board 80 receives the DTACK signal, the CPU board 80 ends the memory access cycle by relinquishing the address and the strobes. The state of the data strobe signal, therefore, is changed, which signifies to the board select circuit 232 that this particular memory board is no longer being accessed for a read or write operation.

Every four milliseconds, the DRAM is refreshed in order to maintain the stored data. The DRAM is refreshed during the memory refresh cycle. One memory refresh cycle refreshes the data in 256 addresses.

A refresh timer 258 counts clock signals from the CPU board 80, namely, 16-MHz clock signals. Every eight microseconds, the refresh timer 258 overflows and provides a signal to the arbitration and timing circuit 256, thereby initiating the memory refresh cycle. The arbitration and timing circuit 256 enables the refresh address counter 260 and disables the address latches 220. The contents of the refresh address counter 260 are then delivered to the address bus 262, the memory locations to be refreshed are accessed, and the row address strobes are activated. Subsequently, the arbitration and timing circuit 256 ends the refresh cycle and updates the refresh address counter 260.

FIG. 7 is a block diagram of the CPU board 80 for the recorder unit 14. The CPU board 80 includes a microprocessor 270, such as a Motorola MC68000 microprocessor. An interrupt handler 272 prioritizes interrupts for the microprocessor 270. Flip-flops are used to latch the various interrupts. The interrupt handler 272 also keeps track of which interrupt has been recognized by the microprocessor 270.

The microprocessor 270 delivers data to and receives data from a data bus buffer 274 over a data bus 276. The data bus buffer 274 is connected to the data bus on the backplane. The microprocessor 270 delivers address signals to an address bus buffer 278 over an address bus 280. The address bus buffer 278 is connected to the address bus on the backplane. Furthermore, the microprocessor 270 delivers control signals to and receives control signals from a control bus buffer 282 over a control bus 284. The control bus buffer 282 is connected to the control bus on the backplane.

The microprocessor 270 supplies address signals to a programmable read-only memory ("PROM") 286. The PROM 286 then delivers data to the data bus 276. In addition, the microprocessor 270 supplies address sig-

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nals to a random-access memory ("RAM") 288. The RAM 288 is a scratch-pad memory. The RAM 288 delivers data to the data bus 276. A clock generator 290 furnishes 16-MHz clock signals to the microprocessor 270, a wait state generator 292, and a bus error generator 294. An address decoder 296 is connected to the address bus 280. The address decoder 296 provides selected signals to the PROM 286, the RAM 288, the wait state generator 292, and the bus error generator 294.

The wait state generator 292 is started by the data strobe signal, which denotes the beginning of an access cycle. The wait state generator 292 is employed to accommodate the different access times of the PROM 286 and the RAM 288. In other words, the wait state generator 292 makes the speed of the PROM 286 and the speed of the RAM 288 compatible with the speed of the microprocessor 270. For instance, the wait state generator 292 holds the microprocessor 270 in a particular state until the PROM 286 outputs data onto the data bus 276 when the PROM 286 is accessed.

The bus error generator 294 is utilized to determine whether a problem exists with the transfer of data to or from the microprocessor 270. The bus error generator 294 includes a counter that counts for eight microseconds after the microprocessor 270 initiates an access cycle. If the access cycle is not acknowledged within the eight-microsecond period, the bus error generator 294 produces a bus error signal and supplies it to the microprocessor 270, which then takes appropriate action.

The microprocessor 270 communicates with other devices by supplying just an address or by supplying data together with an associated address. Then, the microprocessor 270 waits for the selected device to respond with a data transfer acknowledge signal ("DTACK"). The DTACK signal indicates to the microprocessor 270 that the selected device has accepted the data that was sent to it or that the device has supplied as an output the data that the microprocessor 270 has requested. When the PROM 286 or the RAM 288 is accessed, the wait state generator 292 controls the DTACK signal.

An automatic reset circuit 298 is provided. The automatic reset circuit 298 resets the microprocessor 270 when the message repeater is initially energized. The reset circuit 298 may also be actuated by the operator. For example, the operator may press a reset button (not shown) located in the recorder unit 14 in order to actuate the reset circuit 298.

A parallel interface/timer 300 communicates with the microprocessor 270 through the data bus 276 and the address bus 280. The parallel interface/timer 300 receives an input signal from a time code interface circuit 302. The magnetic tape logger to which the message repeater is connected supplies a time code ("TC") signal to the time code interface circuit 302 over a line 304. This time code signal may be used to provide the time display on the console 12. The manner in which the message repeater keeps track of time is discussed in greater detail below.

The parallel interface/timer 300 is connected to a DIP switch 306. The DIP switch 306 is utilized to denote various equipment configurations. Specifically, the DIP switch 306 supplies signals indicating whether the optional memory board 88 has been installed; whether the display is in a 12- or 24-hour format; and whether the rate at which the encoder and decoder operate is 28

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Kbits/second or 32 Kbits/second. The parallel interface/timer 300 energizes status light-emitting diodes ("LEDs") 308. The status LEDs 308 are located inside the recorder unit 14 and are not normally seen by the operator. However, service personnel may open the recorder unit 14 and observe the status LEDs 308 after system diagnostics are performed, for example. The system diagnostics are described in greater detail below.

The microprocessor 270 communicates with the console control board 78 through a universal asynchronous receiver-transmitter ("UART") 310 and a differential transceiver 312. The differential transceiver 312 delivers serial output data to the differential transceiver 118 on the console control board 78 (FIG. 4) over the line 120. The serial output line for the differential transceiver 312 is the serial input line for the differential transceiver 118. The differential transceiver 312 receives serial input data from the differential transceiver 118 over the line 122. The serial input line for the differential transceiver 312 is the serial output line for the differential transceiver 118. Consequently, the microprocessor 270 on the CPU board 80 may communicate with the microprocessor 94 on the console control board 78. This communication is accomplished with the assistance of the UART 100, the UART 310, and the differential transceivers 118 and 312.

FIG. 8 is a block diagram of the power supply board 86 for the recorder unit 14. A source of A.C. power is connected to the power supply board 86 through the power line 20. A filter 322 removes electromagnetic interference. The A.C. signals are then supplied through a transformer 324 to a preregulator 326 and a line frequency detector 328. The preregulator 326 controls the duty cycle of the input A.C. signal to maintain the voltage on a capacitor 330 at +18 volts D.C. The line frequency detector 328 determines the zero crossings of the input A.C. signal and supplies a line frequency signal to the CPU board 80 (FIG. 7). The line frequency signal may be used to keep track of time, as described in greater detail below.

The +18 volt D.C. signal from the capacitor 330 is supplied to the console control board 78 (FIG. 4) over a line 332. In addition, the +18 volt D.C. signal is delivered to a D.C.-D.C. converter 334. The D.C.-D.C. converter 334 produces a +5-volt D.C. signal as well as a reset signal. The reset signal is supplied to the reset circuit 298 on the CPU board 80 (FIG. 7) when the message repeater is initially energized. The +18 volt D.C. signal from the capacitor 330 is sent to a regulator circuit 336, which produces a +12 volt D.C. signal. The +5 volt D.C. and +12 volt D.C. signals are used to energize the various components in the recorder unit 14.

The +18 volt D.C. signal is also supplied to a battery charging circuit 338, which charges a battery 340 through a diode 342. The battery 340 is utilized to provide power to the message repeater if the A.C. power source is lost. Lead-acid batteries, for example, may be employed. A battery backup switching circuit 344 senses when the A.C. power is lost and closes a switch 346, thereby connecting the battery 340 to the converter 334 and the regulator 336 through a diode 348. Hence, the message repeater may operate even after the A.C. power supply is removed.

#### Timekeeping

The seven-segment indicators 34a-34d show the time of day except when a message is being replayed. During replay, the start time of the message is shown on the

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seven-segment indicators 34a-34d. The colon indicator 38 is used to differentiate between a display of the actual time and a display of the message start time. The message start time is displayed with a nonblinking colon, while the actual time is displayed with a blinking colon.

Normally, the message repeater receives time information from the associated magnetic tape logger with which it is used. The magnetic tape logger supplies the time information to the time code interface 302 on the CPU board 80 (FIG. 7). This time information is used to display the actual time on the seven-segment indicators 34a-34d. Furthermore, when a message is stored in the DRAM, message start time information, from the magnetic tape logger, is also stored so that the message start time may be displayed on the seven-segment indicators 34a-34d when the message is played back.

If the time information from the magnetic tape logger is unavailable, a routine in the microprocessor 270 on the CPU board 80 (FIG. 7) counts the signals from the line frequency detector 328 on the power supply board 86 (FIG. 8) in order to keep track of time. That is, a routine in the microprocessor 270 uses the A.C. power source to keep track of time. This is a so-called software clock. The routine causes the microprocessor 270 to count the signals from the line frequency detector 328 in order to determine seconds, minutes, and hours. The microprocessor 270 on the CPU board 80 (FIG. 7) sends appropriate signals to the microprocessor 94 on the console control board 78 (FIG. 4). The microprocessor 94 then appropriately controls the display 28 to show either the actual time or a message start time.

Upon a loss of the A.C. power source, the real time clock 98 on the console control board 78 (FIG. 4) provides time information to the microprocessor 94, which then suitably controls the display 28.

#### System Diagnostics

When the message repeater is initially energized, a number of system diagnostics are performed. Initially, all segments and indicators on the display 28 are energized. If a certain segment or indicator is not energized, the operator visually observes a fault in this portion of the display and takes appropriate action. The operator then presses each of the keys 52 through 66. As each key is pressed, an associated portion of the display 28 is deenergized. After all of the keys 52 through 66 have been pressed, the display should be completely deenergized. If the display is not completely deenergized, the operator visually observes the faulty condition and takes suitable action.

Next, the operator actuates the save button 58, the clear button 60, the restore button 62, the pause/play button 52, and the previous/rewind button 54 to carry out other diagnostics. When the operator actuates the save button 58, the segments on the display are sequentially energized. The operator visually observes the display to determine whether two segments are energized simultaneously. If so, a short circuit exists between these two segments, and the operator takes appropriate action. The segments in the message index timeline 48 and the playback index timeline 50 are sequentially energized to enable the operator to determine whether a fault condition exists.

Following completion of the display diagnostic, described above, the operator actuates the clear button 60 to initiate a memory diagnostic. The DRAM on each memory board includes eight memory modules. By pressing the clear button 60, the operator causes a predetermined pattern of bits to be written to and then read

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from each memory location. After the bits are read from the memory location, they are compared with the bits that were written to the memory location. If the bits do not correspond, the memory location is determined to be bad and is not used for storing message information.

The display 28 provides a visual indication to the operator of the memory diagnostic. In the preferred embodiment, the segments in the timelines 48 and 50 above and below the legends 1 through 8 flash for a duration of about 2.5 to about 5.0 minutes while the memory diagnostic is being carried out. When the memory diagnostic is finished, a tone is emitted by the speaker 22, and the segments above the legends 1 through 8 remain energized. If a particular memory module has failed, the segment above the associated legend will not be illuminated. As an example, if the memory module associated with the legend 6 is faulty, the segment above the legend 6 is deenergized, while the segments above the legends 1 through 5 and 7 and 8 are turned on. If the message repeater includes the optional memory board 88, segments in the playback index timeline 50 also are used. The segments in the playback index timeline 50 below the legends 1 through 8 correspond to the eight memory modules in the optional memory board 88. If a module in the optional memory board 88 is faulty, the segment below the legend associated with this memory module will not be illuminated after the memory diagnostic is completed.

The operator actuates the restore button 62 to initiate a diagnostic of the audio circuitry in the console 12. When the operator presses the restore button 62, a 600-Hz signal is injected into the audio circuitry in the console 12. A corresponding tone should be heard by the operator through the speaker 22 or through connected headphones. If this tone is not heard, the operator takes suitable corrective action.

The operator actuates the pause/play button 52 to institute a diagnostic of the audio circuitry in the recorder unit 14. The 80-Hz oscillator 170, the 80-Hz low-pass filter 172, and the 80-Hz detector 202 on the analog board 84 (FIG. 5) are employed to perform this diagnostic. The operation of these circuits is described above. If the 80-Hz detector 202 senses the 80-Hz signal, the seven-segment indicators 34a-34d are energized to show the word "pass." However, if the 80-Hz detector 202 does not sense the 80-Hz signal, the seven-segment indicators 34a-34d show the word "fail."

The operator actuates the previous/rewind button 54 in order to exit the off-line diagnostic mode.

When the message repeater is in the operating or on-line mode, two diagnostics are performed. The 80-Hz circuitry tests the analog circuits of the analog board except when the message repeater is in the record mode or the playback mode. If the equipment fails the 80-Hz test, the box around the SERVICE legend on the display is energized. In addition, when the message repeater is not in the record mode or the playback mode, the memory diagnostic is performed. That is, a predetermined pattern of bits is written to and read from the locations in the DRAM. After the pattern of bits is read from the memory, it is compared with the pattern of bits that was written to the memory. If a discrepancy exists, that portion of the memory is flagged as faulty, and the box around the SERVICE legend is energized along with the letter "R." The letter "R" informs the operator that the DRAM has failed the memory diagnostic and that appropriate corrective

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action is required. The on-line 80-Hz test and the on-line memory diagnostic are performed at different times inasmuch as they each require data to be written to and read from the DRAM. The on-line 80-Hz test is performed in response to an interrupt, while the on-line memory diagnostic is carried out by a background routine.

Furthermore, if the microprocessor 94 on the console control board 78 tries to communicate with the CPU board 80 five times and is unsuccessful, the box around the SERVICE legend is energized along with the letter "L." The letter "L" informs the operator that a fault condition exists on the line.

#### Flowcharts

FIGS. 9 through 14 are flowcharts for the routine and subroutines that process a record or playback interrupt.

As background, a circular doubly linked list is the data structure employed to store memory address information for the DRAM. A linked list is composed of nodes, and three types of nodes are used for the routine and subroutines illustrated in FIGS. 9 through 14. Each type of node contains a forward pointer, an information field, and a backward pointer. The backward pointer points to the previous node in the list, while the forward pointer points to the following node in the list. The three types of nodes used in the routine and subroutines illustrated in FIGS. 9 through 14 are a record index, a linked list record, and a playback index record.

The record index includes a backward pointer; information designating the next available storage address in the DRAM; a secondary forward pointer that points to a saved message, if one exists; and a forward pointer. The record index is the first node in the list. A linked list record is used for each recorded message. Each linked list record includes a backward pointer; information designating the beginning address of the message in the DRAM; a flag for indicating whether the message is a saved message; a flag for indicating whether the message is continued around a saved message; a flag for indicating whether the message is a continuation around a saved message; information designating the location of start-of-message segment on the display; information indicating the time the message was received; information designating the end address of the message in the DRAM; and a forward pointer. The playback index record includes a backward pointer; information concerning the next playback address; and a forward pointer. The information concerning the next playback address is called the current playback index, and corresponds to the position of the cursor along the playback index timeline. During the playback mode, if the current playback index equals the current record address, the incoming message is replayed as it is received.

FIG. 9 depicts the initial portion of the routine that services a record or playback interrupt. When such an interrupt is received, the routine tests to determine whether the message repeater is in the diagnostics mode. If so, the routine then tests to determine whether the 80-Hz test is being performed. If the 80-Hz test is being run, the playback interrupt is disabled, and then the record interrupt is disabled. Subsequently, the routine checks to see whether an 80-Hz signal has been detected by the 80-Hz detector. If the 80-Hz detector senses the 80-Hz signal, the routine causes a "pass" indication to be displayed, but if the 80-Hz detector does not sense the 80-Hz signal, the routine causes a "fail" indication to be displayed. After the 80-Hz test is

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either passed or failed, the routine returns from the interrupt, as shown by the point A in the flowchart.

After another interrupt is received, the routine again checks to see whether the message repeater is in the diagnostics mode. If the message repeater is not in the diagnostics mode, a check is made to determine whether the message repeater is in the record mode. Assume that the message repeater is in the record mode. Then, the next available storage address in the DRAM is obtained. The next available storage address is also referred to as the current record address. After this address is obtained, the data to be stored in this address is read from the record channel. Specifically, 16 bits from the record channel are copied into the DRAM at the address previously obtained. Thereafter, the RLIST, or record list, subroutine is called.

The RLIST subroutine is shown in FIGS. 11 and 12. Initially, the RLIST subroutine ascertains whether the entire contents of the DRAM have been saved. If so, the RLIST subroutine returns to the main routine because no storage space is available. But if the entire DRAM has not been saved, the current record address is updated. In addition, a memory location containing the accrued record time is incremented to denote that additional data has been recorded. Then, the subroutine performs three tests to determine whether the message repeater is in the playback mode, the pause mode, the rewind mode, or the fast-forward mode. These tests are performed in order to ascertain how the message index timeline and the playback index timeline should be updated. If the message repeater is in none of these modes, the current playback index (cursor position) is set to correspond to the farthest advance point.

After these tests and, if necessary, an update of the current playback index, the RLIST subroutine determines whether the current record address is part of a bad DRAM block. At this point, the current record address corresponds to the next storage location. If the current record address is part of a bad DRAM block, the RLIST subroutine sets a flag to signify that the current message is to be continued around the bad DRAM block. This is accomplished by creating a new message that begins at the end of the bad DRAM block. If the current record address is not part of a bad DRAM block, no action is taken.

Subsequently, the RLIST subroutine checks to determine whether the current record address is the beginning of the next message. If the current record address is not the beginning of the next message, the RLIST subroutine returns to the main routine. However, if the current record address is the beginning of the next message, then the RLIST subroutine determines whether that message has been saved. If that message has been saved, the RLIST subroutine links the saved message out of the list and treats it as a secondary message. Then, the RLIST subroutine sets a flag to indicate that the current message is continued, and it creates a new message beginning at the end of the saved message. Next, the subroutine updates the current record address to point to a location after the saved message.

The RLIST subroutine then increments the beginning address of the next message, which means that the start of the next message will be recorded over. The step of incrementing the start address of the next message is also performed if the current record address is equal to the beginning address of the next message but the next message is not a saved message. Following the incrementing step, the RLIST subroutine tests to see

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whether the start address of the current message equals the end address of the current message. When the start address of the current message equals the end address of the current message, the entire message has been recorded over. In other words, the current message is no longer in the system. The RLIST subroutine then links out the current message, and then updates the node information. Once the node information has been updated, the RLIST subroutine again checks to see whether the current message is a saved message. This transfer of control by the RLIST subroutine is shown by the points H in the flowchart.

Following a return from the RLIST subroutine to the main routine shown in FIG. 9, the main routine reads the setting on the DIP switch. The DIP switch may be set so that the CVSD conversion rate is 28 Kbits/second or 32 Kbits/second, as explained above during the description of the analog board 84. The DIP switch is read in preparation for updating the message index timeline. If the CVSD conversion rate is 28 Kbits/second, the routine reads one value from memory, and if the CVSD conversion rate is 32 Kbits/second, the routine reads another value from memory. The value read from memory is employed to determine when ten seconds of record time have elapsed. The message index timeline is updated every ten seconds of record time. For instance, the message start indications move one segment to the left for every ten seconds of record time. Accordingly, the routine tests to determine whether the accrued record time equals the value read from memory. If so, a flag is set to indicate that the message index timeline should be updated by shifting the energized segments to the left. If the accrued record time does not equal the value read from memory, the routine determines whether the message repeater is in the playback mode (FIG. 10).

The step of testing to determine whether the message repeater is in the playback mode may also be performed initially after the routine checks to determine whether the message repeater is in the diagnostics mode and whether the message repeater is in the record mode. If the message repeater is not in the playback mode, the routine transfers control as indicated by the points C in the flowchart (FIGS. 10 and 14). If the message repeater is in the playback mode, the current playback address is obtained. Then, a memory read operation is performed, and the data at this address is read from the DRAM. This data is then supplied to the playback channel. Next, the main routine calls the PLIST, or playback list, subroutine.

FIG. 13 shows a flowchart for the PLIST subroutine. Initially, the PLIST subroutine checks to determine whether the current playback address equals the current record address. This condition means that the latest recorded message has been replayed. When this condition occurs, the PLIST subroutine updates the current playback address, turns off the playback indicator, sounds a warning tone, and disables the playback interrupt. After these steps are accomplished, the PLIST subroutine returns to the main routine.

However, if the current playback address does not equal the current record address, the PLIST subroutine tests to determine whether the current playback address equals the end of the current message. If not, the PLIST subroutine updates the current playback address and increments the accrued play time counter. Subsequently, the PLIST subroutine ascertains whether the current playback address equals the end of the current

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message. If not, the PLIST subroutine returns to the main routine. However, if the current playback address now equals the end of the current message, the subroutine determines whether the current playback address equals the current record address. When the current playback address equals the current record address, the latest recorded message has been replayed, as indicated above. If the current playback address equals the current record address, the PLIST subroutine updates the current playback address, turns off the playback indicator, sounds a warning tone, and disables the playback interrupt.

The second test to determine whether the current playback address equals the current record address is also accomplished if the current playback address equals the end of the current message. If the playback address does not equal the current record address after the second test, the forward pointer and the backward pointer of the playback index record are updated, and a new message start time is sent to the console. Then, the PLIST subroutine returns to the main routine.

Following a return from the PLIST subroutine to the main routine shown in FIG. 10, the main routine determines whether the CVSD conversion rate is 28 Kbits/second or 32 Kbits/second. If the conversion rate is 28 Kbits/second, one value is read from memory, and if the conversion rate is 32 Kbits/second, another value is read from memory. The value read from memory corresponds to ten seconds of elapsed play time at the conversion rate utilized by the CVSD encoder and decoder. The routine uses the value read from memory to determine if ten seconds of play time have elapsed. If so, a flag is set to cause an update of the playback index timeline. Specifically, the playback index or cursor moves one segment to the right for every ten seconds of play time. After the flag is set, or if ten seconds of play time have not elapsed, the routine returns from the interrupt.

Once a record or playback interrupt is received, the routine tests, first, to see if the message repeater is in the diagnostics mode; second, to see if the message repeater is in the record mode; and, third, to see if the message repeater is in the playback mode. If the answer to all three tests is no, then the routine transfers control to the section starting with point C in FIG. 14. Following a transfer of control to this point, the routine again checks whether the message repeater is in the record mode. If so, the routine returns from the interrupt. However, if the message repeater is not in the record mode, the routine initiates the 80-Hz test. Then, the routine inquires whether an 80-Hz signal has been detected. If so, the routine returns from the interrupt. If an 80-Hz signal has not been detected, the routine sets a flag that causes the box around the SERVICE legend to become illuminated.

The above description of the flowchart for processing a record or playback interrupt shows that the message repeater is capable of recording and replaying messages substantially simultaneously. The audio signals on the record channel are converted into digital signals, and 16 bits of data are stored in the DRAM during a memory write operation. Similarly, 16 bits of data are read from the DRAM during a memory read operation, and the recalled digital signals are converted into analog audio signals. The step of writing 16 bits to the DRAM may be followed by the step of reading 16 bits from the DRAM. Thus, a particular message may be recorded and replayed at the same time. Moreover,

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one message may be recorded, while a different message is being replayed. The operator may select the message that is being replayed from any message stored in the DRAM. In particular, the operator may position the cursor with the buttons 52-56 on the console 12 to access any message or any portion of any message.

Although particular illustrative embodiments of the invention have been described herein with reference to the accompanying drawings, the invention is not limited to these particular embodiments. Various changes and modifications may be made thereto by those skilled in the art without departing from the spirit or scope of the invention, which is defined by the appended claims.

We claim:

1. A system for recording and replaying messages, comprising:

logging means for concurrently recording audio signals in analog form from a message channel;

encoding means for converting the audio signals of messages on the channel into corresponding digital signals;

memory means for wraparound storage of the digital signals corresponding to portions of the audio signals, recorded by the logging means;

write means for writing the digital signals into the memory means;

recall means for selectively recalling the digital signals from the memory means; and

decoding means for converting the digital signals recalled from the memory means into analog audio signals.

2. A system as recited in claim 1, further comprising display means for displaying indications of the messages stored in the memory means.

3. A system as recited in claim 2, wherein the display means includes a selectively movable index and means for displaying an indication corresponding to a starting point for each message, and wherein the recall means is responsive to a signal representative of the position of the index.

4. A system as recited in claim 3, wherein the display means includes first and second arrays of energizable segments, a segment in the first array being energized to denote the starting point of a respective message, and a segment in the second array being energized to denote the position of the index.

5. A system as recited in claim 4, further comprising means for selectively checking the display means, the checking means including means for sequentially energizing each segment in the first and second arrays.

6. A system as recited in claim 1, further comprising means for generating a relatively low audio frequency signal and means for detecting the relatively low audio frequency signal; wherein the relatively low audio frequency signal is converted by the encoding means, stored in the memory means, recalled by the recall means, converted by the decoding means, and then supplied to the detecting means.

7. A system as recited in claim 1, further comprising means for preventing selected digital signals stored in said memory means from being changed, the selected digital signals corresponding to a selected message, whereby the selected message is saved.

8. A system as recited in claim 1, wherein the write means and the recall means are operable substantially simultaneously.

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9. A system as recited in claim 1, further comprising means for selecting as the message channel a particular channel from a plurality of channels.

10. A method for recording and replaying audio messages which are concurrently being recorded on an analog logger, comprising the steps of:

selecting a particular one of the channels of said logger on which audio signals are provided;

converting the audio signals on the particular channel into corresponding digital signals;

storing the digital signals corresponding to a portion of the messages recorded on the logger in memory means in wraparound form;

selectively recalling digital signals from the memory means; and

converting the digital signals recalled from the memory means into analog audio signals.

11. A method as recited in claim 10, further comprising the step of displaying, on a display means, indications of the messages stored in the memory means.

12. A method as recited in claim 11, wherein the displaying step includes displaying an indication corresponding to a starting point for each message and displaying a positionable cursor, and wherein the recalling step is performed in response to a signal representative of the position of the cursor.

13. A method as recited in claim 12, wherein the displaying step includes displaying a first line formed from a plurality of segments and displaying a second line formed from a plurality of segments, a segment in the first line being energized to denote the starting point of a message and a segment in the second line being energized to denote the position of the cursor.

14. A method as recited in claim 13, further comprising the step of selectively checking the display means for sequentially energizing each segment in the first line and each segment in the second line.

15. A method as recited in claim 10, further comprising the steps of generating a relatively low audio frequency signal and detecting the relatively low audio frequency signal, and wherein the first converting step includes converting the relatively low audio frequency signal into corresponding digital signals, the storing step includes storing the last-mentioned digital signals, the recalling step includes recalling the last-mentioned digital signals, the second converting step includes converting the last-mentioned digital signals into analog audio signals, and the detecting step includes detecting the last-mentioned analog audio signals.

16. A method as recited in claim 10, further comprising the step of preventing selected digital signals stored in the memory means from being changed, the selected digital signals corresponding to a selected message.

17. A method as recited in claim 10, further comprising the step of selectively detecting a fault in the operation of components performing at least one of first converting, storing, recalling, and second converting steps and additionally comprising the step of displaying an indication if a fault is detected.

18. A method as recited in claim 10, wherein the storing and recalling steps are performed substantially simultaneously.

19. An apparatus for recording and replaying audio signals concurrently being recorded on an analog logger, comprising:

encoding means for converting the audio signals on a selected channel of the logger into corresponding digital signals;

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memory means for wraparound storage of the digital signals corresponding to a portion of the audio signals recorded by the logger;

recall means for selectively recalling the digital signals from said memory means;

decoding means for converting the digital signals recalled from said memory means into analog audio signals;

clock means for producing signals representative of time; and

display means, responsive to said clock means, for displaying indications representative of present time of day and time at which a message was received.

20. An apparatus as recited in claim 19, wherein the clock means is responsive to an A.C. power source.

21. An apparatus as recited in claim 20, further comprising secondary clock means for producing signals representative of time, the display means being responsive to said secondary clock means upon a loss of the A.C. power source.

22. An apparatus as recited in claim 19, wherein signals corresponding to a message start time are stored in the memory means and recalled from the memory means when the associated message is replayed.

23. A method for recording and replaying audio signals concurrently being recorded on an analog logger, comprising the steps of:

converting the audio signals on a selected channel of the logger into corresponding digital signals;

storing the digital signals corresponding to a portion of the audio signals recorded by the logger in a memory means in wraparound format;

selectively recalling the digital signals from the memory means; and

converting the digital signals recalled from the memory means into analog audio signals;

wherein the steps of converting the audio signals and storing are accomplished substantially simultaneously with the steps of recalling and converting the digital signals.

24. A method as recited in claim 23, wherein the steps of converting the audio signals and storing are performed on signals associated with a particular message and wherein the steps of recalling and converting the digital signals are performed on signals associated with the particular message.

25. A method as recited in claim 23, wherein the steps of converting the audio signals and storing are performed on signals associated with a first message and the steps of recalling and converting the digital signals are performed on signals associated with a second message.

26. A method as recited in claim 25, further comprising the step of selecting the second message from a plurality of messages, signals associated with each message being stored in said memory means.

27. An apparatus for recording and replaying audio signals concurrently being recorded on an analog logger, comprising

encoding means for converting the audio signals on a selected channel of the logger into corresponding digital signals;

memory means of finite storage capacity for storing the digital signals corresponding to a portion of the audio signals recorded by the logger and for replacing the oldest stored digital signals with cur-

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rent digital signals after the storage capacity is reached;

recall means for selectively recalling the digital signals from the memory means;

decoding means for converting the digital signals recalled from the memory means into analog audio signals; and

means for selectively saving a particular message comprised in the stored digital signals, even after the storage capacity is reached.

28. An apparatus as recited in claim 17, wherein the memory means includes a multiplicity of memory locations and the saving means includes means for designating particular locations associated with the particular message.

29. An apparatus as recited in claim 28, wherein the multiplicity of locations includes a first location and a last location; wherein digital signals are stored in successive locations starting at the first location, the location following the last location being the first location; and wherein said means for designating particular locations includes means for preventing current digital signals from being stored in said particular locations associated with said particular message.

30. An apparatus as recited in claim 29, wherein current digital signals associated with a subsequent message are stored in locations preceding and following said particular locations.

31. A method for recording and replaying audio signals concurrently being recorded on an analog logger, comprising the steps of:

converting the audio signals on a selected channel of the logger into corresponding digital signals;

storing the digital signals corresponding to a portion of the audio signals recorded by the logger in memory means of finite storage capacity and replacing the oldest stored digital signals with current digital signals after said storage capacity is reached;

selectively recalling the digital signals from the memory means;

converting the digital signals recalled from the memory means into analog audio signals; and

selectively saving a particular message.

32. A method as recited in claim 31, wherein the saving step includes designating particular locations associated with the particular message from a multiplicity of memory locations in the memory means.

33. A method as recited in claim 32, wherein the multiplicity of locations includes a first location and a last location; wherein the storing step includes storing digital signals in successive locations starting at the first location, the location following the last location being the first location; and wherein the saving step includes preventing current digital signals from being stored in said particular locations associated with said particular message.

34. A method as recited in claim 33, wherein the storing step includes storing current digital signals associated with a subsequent message in locations preceding and following said particular locations.

35. An apparatus for recording and replaying audio signals concurrently being recorded on an analog logger, comprising:

encoding means for converting the audio signals on a selected channel of the logger into corresponding digital signals;

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memory means for storing the digital signals corresponding to a portion of the audio signals recorded by the logger in wraparound form;

recall means for selectively recalling the digital signals from the memory means;

decoding means for converting the digital signals recalled from the memory means into analog audio signals; and

display means for displaying indications of the messages comprised of the digital signals stored in the memory means.

36. An apparatus as recited in claim 35, wherein the display means includes a selectively positionable cursor and means for displaying an indication corresponding to a starting point for each stored message, and wherein the recall means is responsive to a signal representative of the position of the cursor.

37. An apparatus as recited in claim 36, wherein said display means includes a first line formed from a plurality of energizable segments and a second line formed from a plurality of energizable segments, means for energizing a segment in the first line to denote the starting point for the associated message, and means for energizing a segment in the second line to denote the position of the cursor.

38. An apparatus as recited in claim 37, further comprising means for shifting the energized segments in the first line from right to left across the display, with the spacing between remaining constant, as additional digital signals are stored.

39. An apparatus for recording and replaying audio signals concurrently being recorded on an analog logger, comprising:

encoding means for converting the audio signals on a selected channel of the logger into corresponding digital signals;

memory means for wraparound storage of the digital signals corresponding to a portion of the signals recorded by the logger;

recall means for selectively recalling the digital signals from said memory means;

decoding means for converting the digital signals recalled from the memory means into analog audio signals;

means for selectively checking for proper operation of at least one of the encoding means, the memory

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means, the recall means, and the decoding means; and

display means, responsive to the checking means, for providing an indication if improper operation is detected.

40. An apparatus as recited in claim 39, wherein the checking means includes means for generating a relatively low audio frequency signal; means for supplying the relatively low audio frequency signal to the encoding means such that said relatively low audio frequency signal is converted into digital signals for storage in said memory means, for recall by said recall means, and for conversion by said decoding means; and means for detecting the relatively low audio frequency signal converted by said decoding means.

41. An apparatus as recited in claim 40, wherein the relatively low audio frequency signal is continuously converted by the encoding means, stored in said memory means, recalled by the recall means, converted by the decoding means, and detected by the detecting means except when signals corresponding to a message are being recorded or replayed.

42. An apparatus as recited in claim 39, wherein the display means includes a first line formed from a plurality of segments and a second line formed from a plurality of segments, a segment in the first line being energized to denote a starting point for a message, a segment in the second line being energized to denote the position of a cursor; and wherein the checking means includes means for sequentially energizing each segment in the first line and each segment in the second line.

43. An apparatus as recited in claim 39, further comprising means for providing a predetermined pattern of bits to a selected location in said memory means, wherein the recall means is responsive to said pattern providing means and recalls data from the selected location, and additionally comprising means for comparing the data recalled from the selected location with the predetermined pattern of bits.

44. A system as described in claim 1 further comprising means for selecting the digital signals written into the memory means to correspond to portions of the audio signals comprising messages.

45. A method as described in claim 23 further comprising the step of selecting the digital signals to be stored in the memory means to correspond to portions of the audio signals comprising messages.

\* \* \* \* \*

MUKASEY, S.

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Attorneys for Plaintiff Counterclaim-  
Defendant Dictaphone Corporation and  
Counterclaim-Defendant Nice Systems, Inc.

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

DICTAPHONE CORPORATION,

Plaintiff,

-against-

MERCOM SYSTEMS, INC.,

Defendant.

MERCOM SYSTEMS, INC.,

Counterclaim-Plaintiff,

-against-

DICTAPHONE CORPORATION AND

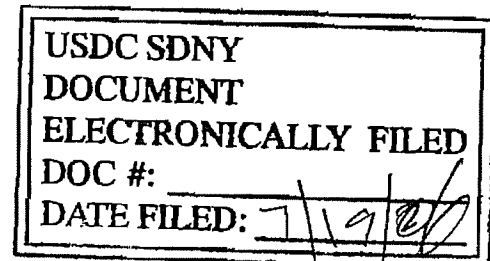
NICE SYSTEMS INC.,

Counterclaim-Defendants.

Hon. Michael B. Mukasey

Docket No. 04 Civ. 5844 (MBM)  
(THK)

STIPULATION OF DISMISSAL  
WITH PREJUDICE PURSUANT TO  
FED.R.CIV.P. RULE 41(a)(1)(ii)



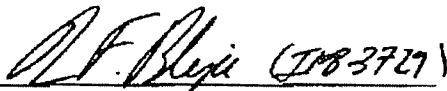
Whereas all of the parties to this action, including Plaintiff Counterclaim-Defendant Dictaphone ("Dictaphone"), Defendant Counterclaim-Plaintiff Mercom Systems, Inc. ("Mercom"), and Counterclaim-Defendant Nice Systems, Inc. ("Nice") (Dictaphone,

Mercom and Nice are referred to collectively as the "Parties"), have agree to resolve and settle this action without further litigation, and the law firm of Brown Raysman Millstein Felder & Steiner LLP has appeared as counsel of record for both Dictaphone and Nice in this action,

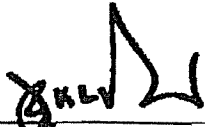
It is hereby stipulated by and between the counsel for the respective Parties herein that pursuant to Federal Rule of Civil Procedure 41(a)(1)(ii), Plaintiff Counterclaim Defendant Dictaphone Corporation, Defendant Counterclaim Plaintiff Mercom Systems, Inc. and Counterclaim Defendant Nice Systems, Inc. hereby stipulate and agree to dismiss the above entitled action, including all counterclaims, with prejudice and without costs, expenses or fees. The Parties further stipulate and agree that this Court will retain jurisdiction for purposes of enforcing the provisions of the settlement.

This stipulation has been agreed to and executed by all of the parties who have appeared in this action.

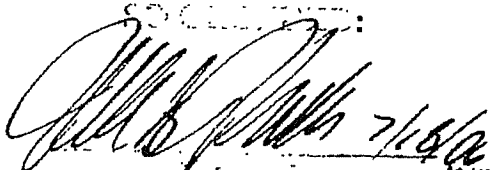
Dated: New York, New York  
June 30, 2006

  
Ivan F. Blejec (IB-3729)  
THE LAW OFFICES OF SHARE AND  
BLEJEC LLP  
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Attorneys for Plaintiff Counterclaim-  
Defendant Dictaphone Corporation and  
Counterclaim-Defendant Nice Systems, Inc.

SO ORDERED:  
  
7/16/06

# **EXHIBIT T**

REDACTED

# **EXHIBIT U**

CSB

**UNITED STATES DISTRICT COURT  
DISTRICT OF CONNECTICUT**

DICTAPHONE CORPORATION,

Plaintiff,

v.

NICE SYSTEMS, LTD. and NICE  
SYSTEMS, INC.,

Defendant.

Civil Action No. 3:00 CV 1143 (CFD)

Date: January 9, 2001

**NOTICE OF ENTRY OF ORDER REGARDING THE AUTOMATIC  
STAY IMPOSED BY 11 U.S.C. § 362**

Plaintiff Dictaphone Corporation ("Dictaphone") submits this notice of entry of order determining that Dictaphone's action against Nice Systems, Ltd., and Nice Systems, Inc. (collectively "Nice") is not stayed by the automatic stay imposed by section 362 of the Bankruptcy Code, and that the stay is modified to allow for the liquidation of Nice's counterclaims asserted in the litigation.

On November 29, 2000, Dictaphone filed a voluntary petition for reorganization under chapter 11 of the Bankruptcy Code. As a result of that filing, defendants' counterclaims in this litigation were subject to the automatic stay provisions of 11 U.S.C. § 362(a)(1).

Defendants subsequently asked this Court to stay the entire litigation pending the reorganization. In response, the Court imposed a temporary stay of all outstanding deadlines and instructed the parties to submit briefs addressing the impact of the automatic stay.

As more fully explained in Dictaphone's Opposition to Defendants' Motion to Stay the Litigation, and Dictaphone's Response to Defendants' December 20, 2000 letter brief, Dictaphone believes the bankruptcy petition had little impact on the litigation and that defendants' motion was interposed merely to delay these proceedings. Accordingly, Dictaphone unilaterally asked the Bankruptcy Court to lift the stay in order to permit the entire action to move forward without further obstruction.

On January 4, 2001, the Bankruptcy Court heard Dictaphone's motion and ordered that the stay be lifted. A copy of the order lifting the stay is attached to this Notice. Therefore, this action may proceed in all respects.

During the temporary stay imposed by this Court, deadlines for the following materials have now passed:

- (1) Defendants' Reply in Support of Motion for Early Scheduling of a Claim Construction (Markman) Hearing (original due date: December 5, 2000);
- (2) Defendants' Reply in Support of Motion to Separate the Issues of Damages and Willfulness from the Liability Phase of Trial (original due date: December 6, 2000);
- (3) Defendants' Responses to Plaintiff's First Set of Interrogatories (original due date: December 18, 2000); and
- (4) Dictaphone's Responses to Defendants' Second Request for Production of Documents to Plaintiff (original due date: December 14, 2000)

Dictaphone has contacted Nice to discuss the status of these materials and we expect to propose new deadlines to the Court within the next few days.

DICTAPHONE CORPORATION

Dated: January 9, 2000

By:  \_\_\_\_\_

James Sicilian (CT05608)  
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Hartford, CT 06103-3499  
(860) 275-0100

Joseph Diamante (CT02321)  
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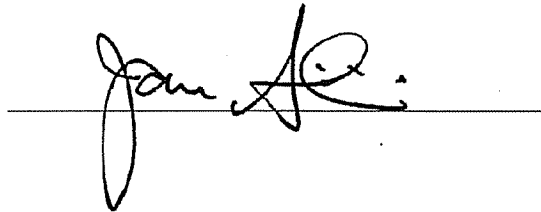
Attorneys for Plaintiff  
Dictaphone Corporation

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of **NOTICE OF ENTRY OF ORDER REGARDING THE  
AUTOMATIC STAY IMPOSED BY 11 U.S.C. § 362** was served this 9th day of January 2001,  
upon counsel for defendants, as follows:

Eric E. Grondahl, Esq. (by Hand)  
Cummings & Lockwood  
CityPlace 1, 185 Asylum Street  
Hartford, Connecticut 06103-3495

Ethan Horwitz, Esq. (by Federal Express)  
Darby & Darby, P.C.  
805 Third Avenue  
New York, New York 10022.

A handwritten signature in black ink, appearing to read "Eric E. Grondahl", is written over a horizontal line.



IN THE UNITED STATES BANKRUPTCY COURT  
FOR THE DISTRICT OF DELAWARE

-----X  
In re: : Chapter 11  
: :  
LERNOUT & HAUSPIE SPEECH : Case Nos. 00-4397 (JHW)  
: through 00-4399 (JHW)  
PRODUCTS N.V., et al., :  
: Debtors. : Jointly Administered  
: :  
-----X

ORDER, UNDER 11 U.S.C. §§ 105 AND 362,  
DETERMINING ACTION COMMENCED BY DEBTOR  
PRE-PETITION IS NOT STAYED BY AUTOMATIC STAY  
AND MODIFYING AUTOMATIC STAY TO ALLOW DEFENDANT TO  
DEFEND AGAINST ACTION AND LIQUIDATE COUNTERCLAIMS

Lernout & Hauspie Speech Products N.V. and its affiliated debtors and debtors-in-possession in the above-captioned cases, Dictaphone Corporation ("Dictaphone") and L&H Holdings USA, Inc. (collectively, the "L&H Group"), having requested, by motion dated December 15, 2000 (the "Motion"),<sup>1</sup> entry of an order, under sections 105 and 362 of title 11 of the United States Code, 11 U.S.C. §§ 101-1330 (as amended, the "Bankruptcy Code"), determining that Dictaphone's action pending against Nice Systems Ltd. and Nice Systems Inc. (collectively, "Nice") in the United States District Court for the District of Connecticut (the "Connecticut Court"), Civil Action No. 3:00 CV 1143 (CFD) for allegedly infringing upon Dictaphone's U.S. Patent Nos. 5,396,371 and 5,339,203 (the "Action") is not prohibited from going forward by the automatic stay and modifying the

<sup>1</sup> Capitalized terms not defined in this Order shall have the meanings given to them in the Motion.

automatic stay, to the extent that it applies, to allow Nice to defend against the Action and allow for the liquidation of Nice's Counterclaims of patent invalidity and non-infringement asserted in connection with the Action, provided that the enforcement of a judgment awarded to Nice (if any) is subject to the automatic stay and distribution in these bankruptcy cases; and due and proper notice of the Motion having been given; and no adverse interest being affected; and after due deliberation and sufficient cause appearing therefor, it is hereby

ORDERED, that the Motion is granted; and it is further

ORDERED, that Dictaphone's Action against Nice is not stayed by the automatic stay imposed by section 362 of the Bankruptcy Code; and it is further

ORDERED, that Dictaphone may take all action necessary to prosecute, defend, and protect its interest in the Action including, without limitation, defending against Nice's Counterclaims; and it is further

ORDERED, that the automatic stay is modified to allow Nice to defend against the Action and allow for the liquidation of Nice's Counterclaims of patent invalidity and non-infringement asserted in connection with the Action; and it is further

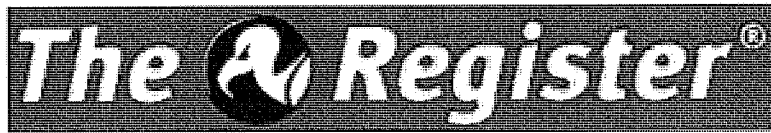
ORDERED, that the enforcement of a judgment awarded to Nice (if any) is subject to the automatic stay and distribution in these bankruptcy cases in accordance with the Bankruptcy Code; and it is further

ORDERED, that this Court retains jurisdiction with respect to all matters arising from or related to the implementation of this Order.

Dated: Wilmington, Delaware  
January 4, 2008

  
United States Bankruptcy Judge

# **EXHIBIT V**



Biting the hand that feeds IT

[The Register » Management »](#)

Original URL:

[http://www.theregister.co.uk/2000/03/08/lernout\\_hauspie\\_swallows\\_dictaphone/](http://www.theregister.co.uk/2000/03/08/lernout_hauspie_swallows_dictaphone/)

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## Lernout & Hauspie swallows Dictaphone for \$511m

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By **Graham Lea**

Published Wednesday 8th March 2000 16:23 GMT

Dictaphone, founded by Alexander Graham Bell in 1888 and thought by many to have disappeared off the face of the map, has been bought by Belgian voice-recognition specialist Lernout & Hauspie (L&H) for 4.75 million shares, in a deal worth \$511 million at last night's Nasdaq closing price. It was sold by Stonington Partners, a New York-based private investment fund that owned 99 per cent of the shares. They bought it from Pitney Bowes in 1995 for \$450 million, so it hasn't been a great success for them, especially as they had to inject cash in 1998 to make it possible for Dictaphone to service its debt. L&H also gets to assume or refinance debt and obligations of some \$425 million. The deal has cost L&H around 15 per cent of its current market capitalisation, which has quadrupled in the last few months. Stonington has agreed to retain two million L&H shares for at least two years and to assign its voting rights to Jo Lernout and Pol Hauspie. It had been known that Stonington had been looking for an exit strategy from its investment for some time. The deal is expected to close at the end of April. The synergy for the acquisition was that Dictaphone had hardly ventured out of the US - nearly 90 per cent of its sales were there - so L&H are expecting to gain from European and Asia/Pacific marketing. The debt burden had made it difficult for Dictaphone to get out of the analog dictation market, and despite deals with Philips and IBM for speech recognition, never made much progress in that market. The product lines of the two companies are complementary. Dictaphone is headquartered in Stratford, Connecticut, and CEO John Duerden (ex-Xerox and Reebok) will keep his job. L&H has acquired Dictaphone as it begins to trade in the black. L&H's main purpose in doing the acquisition was to get Dictaphone's medical dictation business - the company has 55 per cent of the US market, followed by Lanier's 35 per cent. Dictaphone's 1999 healthcare market revenue was \$130 million, with 5000 medical industry customers and 400,000 medical practitioners using its kit. This will make L&H the number one in the US healthcare speech market. In the so-called 'communications recording' business - which sounds like fancy answering machines to us - Dictaphone had revenue of \$100 million. It is intended to spin off separate legal entities for healthcare, telecoms, and internet translation. An important market that needs pioneering will be speech mining from voice

databases, a field where the merged companies will be well-positioned to make progress.

Will this mean SQL for speech, we wonder? ®

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# **EXHIBIT W**

20-F 1 zk62503.htm

As filed with the United States Securities and Exchange Commission on May 17, 2006

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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
WASHINGTON, D.C. 20549**FORM 20-F**Annual Report pursuant to Section 13 or 15(d) of  
the Securities Exchange Act of 1934*For the fiscal year ended December 31, 2005*

Commission file number 0-27466

**NICE-SYSTEMS LTD.**

---

(Exact name of Registrant as specified in its charter and translation of Registrant's name into English)

---

**Israel**

---

(Jurisdiction of incorporation or organization)

---

**8 Hapnina Street, P.O. Box 690, Ra'anana 43107, Israel**

---

(Address of principal executive offices)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each  
ClassName of Each Exchange  
On Which Registered

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**None**

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**None**

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Securities registered or to be registered pursuant to Section 12(g) of the Act:

**American Depositary Shares, each representing  
one Ordinary Share, par value one  
New Israeli Shekel per share**

---

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

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**None**

---

(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

**24,137,643 Ordinary Shares, par value NIS 1.00 Per Share**

In January 2006, we acquired all the outstanding shares of FAST Video Security AG, a Switzerland-based developer of innovative video systems for security and surveillance purposes, for approximately \$21 million in cash, plus potential earn-outs based on performance milestones amounting to a maximum of an additional \$12 million payable over the next three years.

In September 2005, we acquired the assets and assumed certain liabilities of Hannamax Hi-Tech Pty. Ltd. for \$1.8 million. Hannamax was our distributor in Australia and New Zealand. With the acquisition of Hannamax, we expect to expand our customer base and presence in Australia and New Zealand and to expand and strengthen our support organization in the region. Under the terms of the acquisition agreement, in the second quarter of 2006, an additional \$0.5 million was paid, and in 2007 a contingent cash payment of up to \$0.5 million will be due if certain financial performance criteria are met, as part of a two-year earn-out provision. Should any contingent payment be made under the agreement in the future, the additional consideration will increase the aggregate purchase price and, as a result, we will record additional goodwill.

In June 2005, we acquired the assets and assumed certain liabilities of Dictaphone Corporation's Communications Recording Systems business (Dictaphone CRS) for approximately \$38.5 million. Dictaphone CRS provides liability and quality management systems for emergency services, critical facilities, contact centers and financial trading floors. The parties have signed an amendment to the aforementioned asset purchase agreement with Dictaphone, according to which a final adjustment will be made to the audited closing balance sheet, which will reduce the purchase price under the asset purchase agreement by \$2 million. In addition, the parties agreed that we are entitled to all previously undistributed interest and other investment income earned with respect to such escrow funds.

In March 2004, we sold the assets and liabilities of our COMINT/DF military-related business to ELTA Systems Ltd. for \$4.0 million. The assets and liabilities sold included the intellectual property, fixed assets, inventory, and contracts related to the COMINT/DF product line, which included high performance spectral surveillance and direction finding systems that detect, identify, locate, monitor and record transmission sources. In 2002, 2003 and 2004, the COMINT/DF business generated revenues of approximately \$7.2 million, \$6.5 million and \$0.8 million, respectively, and net income of approximately \$1.4 million, \$1.5 million and \$3.2 million (including gain on disposition), respectively.

#### **2005 Public Offering**

In December 2005, we completed a public offering on Nasdaq of 4,600,000 ADSs, representing 4,600,000 of our ordinary shares, at a public offering price of \$46.25 per ADS. The proceeds of the offering, net of underwriting discount and other related expenses, amounted to approximately \$201.7 million.

# **EXHIBIT X**

# REDACTED

# **EXHIBIT Y**



US005819005A

**United States Patent** [19]**Daly et al.**[11] **Patent Number:** **5,819,005**[45] **Date of Patent:** **Oct. 6, 1998**[54] **MODULAR DIGITAL RECORDING LOGGER**

[75] Inventors: **Daniel F. Daly**, Monroe; **John Henits**, Bethel; **Salvatore J. Morlando**, Easton; **Robert B. Swick**, Stratford; **Keith K W Leung**, Monroe; **Constantine P. Messoligitis**, Milford, all of Conn.

[73] Assignee: **Dictaphone Corporation**, Stratford, Conn.

[21] Appl. No.: **623,671**[22] Filed: **Mar. 29, 1996****Related U.S. Application Data**

[63] Continuation of Ser. No. 100,944, Aug. 3, 1993, abandoned.

[51] Int. Cl.<sup>6</sup> ..... **G10L 3/02; G11B 5/09**[52] U.S. Cl. .... **395/2.09; 395/2.79; 395/2.91; 360/48; 379/88**

[58] Field of Search ..... 370/58.2, 62, 84, 370/235, 280; 381/36; 395/2, 2.79, 2.81, 2.87, 2.09, 2.91, 2.94; 360/48, 5, 32; 379/68, 70, 73, 75, 85, 88

[56] **References Cited****U.S. PATENT DOCUMENTS**

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 4,375,083 2/1983 Maxemchuk ..... 364/900  
 4,621,357 11/1986 Naiman et al. .... 370/58.2  
 4,630,261 12/1986 Irvin ..... 370/235  
 4,679,191 7/1987 Nelson et al. .... 370/84  
 4,829,514 5/1989 Frimmel et al. .... 370/58

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 5,121,212 6/1992 Okumura et al. .... 348/738  
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 5,448,420 9/1995 Henits et al. .... 360/48  
 5,511,000 4/1996 Kaloi et al. .... 364/514 A

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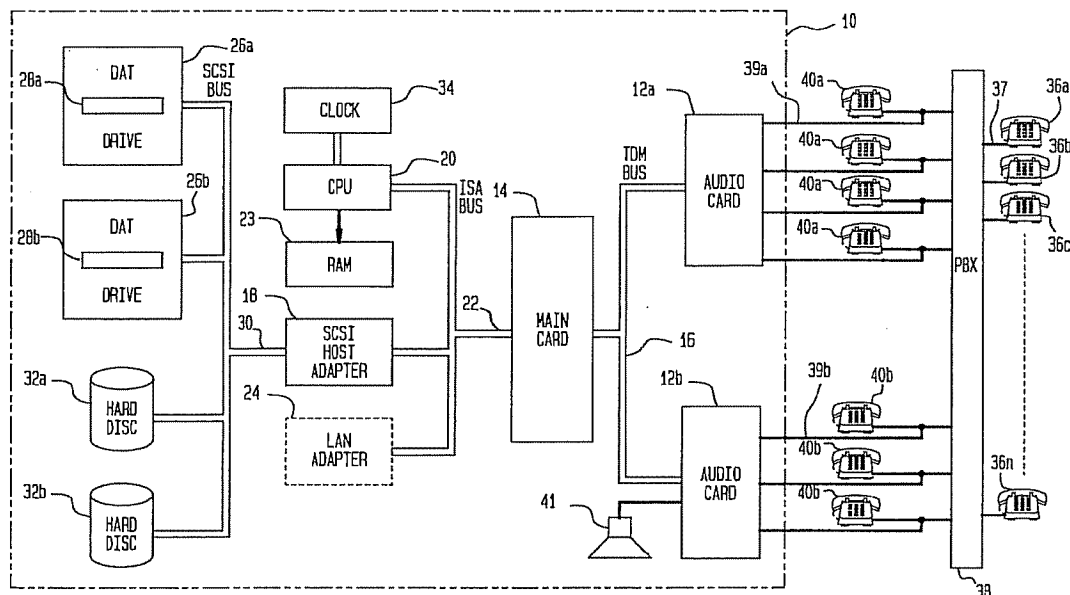
4005027 2/1992 Germany ..... H04M 11/06  
 2174330 7/1990 Japan ..... H04L 12/18  
 1712964 2/1992 U.S.S.R. .... G11C 11/40

**OTHER PUBLICATIONS**

Brochure—VR240 Digital Broadcast Logger (no date).

*Primary Examiner*—Allen R. MacDonald*Assistant Examiner*—Richemond Dorvil*Attorney, Agent, or Firm*—Curtis, Morris & Safford, P.C.; Gregor N. Neff[57] **ABSTRACT**

A modular digital recording system that records audio on digital audio tapes provides redundancy and the ability to record audio while listening to portions of audio that had been recorded on the DAT. The system uses a hard disc that receives audio for recording simultaneously with the DAT. When one wishes to listen to a voice message, one can activate the hard disc to listen to a particular message while the DAT is still recording. The system is modular so that the capacity can be expanded as required. The system includes a LAN adapter so that the system can provide networking access.

**26 Claims, 3 Drawing Sheets**

# REDACTED



US005396371A

**United States Patent** [19]**Henits et al.**[11] **Patent Number:** **5,396,371**[45] **Date of Patent:** **Mar. 7, 1995**

[54] **ENDLESS LOOP VOICE DATA STORAGE AND RETRIEVABLE APPARATUS AND METHOD THEREOF**

5,235,475 8/1993 Tokumatsu et al. .  
 5,283,818 2/1994 Klausner et al. .... 379/88 X  
 5,339,203 8/1994 Henits et al. .... 360/39

[75] **Inventors:** John Henits, Bethel; Robert B. Swick, Stratford; Constantine P. Messologitis, Milford; Christopher S. Goane, Greenwich, all of Conn.

[73] **Assignee:** Dictaphone Corporation, Stratford, Conn.

[21] **Appl. No.:** 171,296

[22] **Filed:** Dec. 21, 1993

[51] **Int. Cl.<sup>6</sup>** ..... G11B 5/00; G11B 5/09

[52] **U.S. Cl.** ..... 360/5; 360/32

[58] **Field of Search** ..... 379/89, 45, 88, 53; 360/46, 51, 5, 32, 33.1

[56] **References Cited****U.S. PATENT DOCUMENTS**

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**FOREIGN PATENT DOCUMENTS**

13260001 3/1970 United Kingdom ..... 360/5

*Primary Examiner*—Donald Hajec

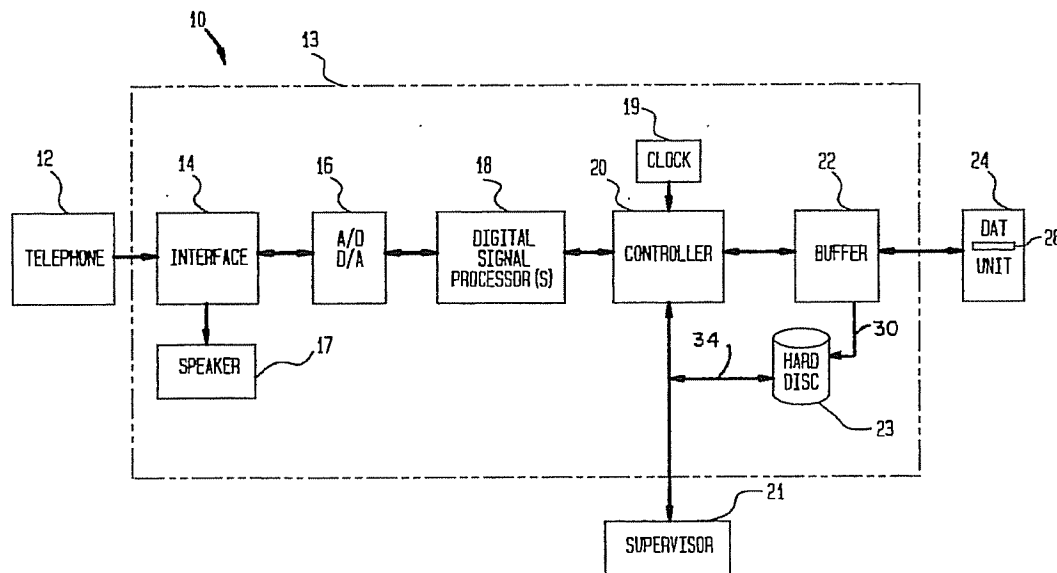
*Assistant Examiner*—Thien Minh Le

*Attorney, Agent, or Firm*—Ronald Reichman; Melvin J. Scolnick

[57] **ABSTRACT**

Apparatus and method for storing and retrieving audio data simultaneously. A digital audio logger is provided with a digital audio tape (DAT) for permanent storage of audio data and with a random access storage (RAS) device that provides fast retrieval of audio. Both the DAT and RAS devices have audio written from a buffer that initially stores audio data temporarily. Two pointers are provided for the RAS device. Because of the randomness characteristic of the RAS device, data can be retrieved rapidly with a first one of the pointers and for this reason has advantages in fast retrieval. The RAS device communicates with a supervisor whereby data can be retrieved therefrom through the first pointer while the RAS device is receiving data from the buffer through the second pointer.

**8 Claims, 4 Drawing Sheets**



# REDACTED

# **EXHIBIT Z**

# REDACTED

# **EXHIBIT AA**

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12



## U.S. Pat. No. 5,396,371 Invalidity Chart

'371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: Racal Rapidax, sold in the U.S. as of at least December 21, 1992.</p> <p>D2: "Racal's 'Rapidax' Voice Logging Recorders Offers Instant Message Recall of Multichannel Calls, Transmissions." (NSDE008300-008302) (evidencing the hardware of the D1 sale). ✓</p> <p>D3: "Rapidax Access Voice Logging Recorder." (NSDE008312-008319) (evidencing the hardware of the D1 sale). ✓</p> <p>D4: "Rapidax Instant Call Recorder," (NSDE008305-008309) (illustrating the hardware of the D1 sale). ✓</p> <p>D5: "Rapidax in Surveillance and Security Monitoring" (NSDE008310-008311) (evidencing the hardware of the D1 sale). ✓</p> <p>D6: "Operator's Manual." (NSDE008320-008324) (evidencing the hardware of the D1 sale). ✓</p> <p>D7: "System Manager's Manual." (NSDE008325-008340) (evidencing the hardware of the D1 sale). ✓</p> <p>D8: "Rapidax Tape Archive and System Network." (NSDE008303-008304) (evidencing the hardware of the D1 sale). ✓</p> <p>D9: Deposition of Andrew Jackson in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008273-008299) (evidencing the hardware of the D1 sale). ✓</p> <p>D10: Expert Report on the Invalidity of U.S. Patent No. 5,396,371 in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008447-008468) (evidencing the hardware of the D1 sale). ✓</p>	

## U.S. Pat. No. 5,396,371 Invalidity Chart

371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D11: United States Patent No. 4,891,835, to Leung, issued on 1986, issued on June 2, 1990.(WSNSDE0003055-80) ✓</p> <p>D12: Sale of Eyretel e1000, sold in the U.S. as of at least October, 1992.</p> <p>D13: Deposition of Chris Blair in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143 (illustrating the hardware of D12 sale).</p> <p>D14: European Patent Publication 0372894, to Koizumi, published on June 13, 1990, filed on December 5, 1989.(WSNSDE0000277-93) ✓</p> <p>D15: U.S. Patent No. 4,905,141, to Brenza, issued February 27, 1990, filed on October 25, 1988.(WSNSDE0003096-126) ✓</p> <p>D16: U.S. Patent No. 4,864,543, to Ward, issued September 5, 1989, filed on April 30, 1987. (WSNSDE0002971-84) ✓</p>	
1. In a method of storing and retrieving audio from a digital audio logger, the steps comprising:	<p>D1: D2, Pages 1-2; D9, Page 8, line 17 – Page 9, line 4.</p> <p>D12: D13, Page 11, lines 7-8.</p> <p>D11: Col. 2, lines 10-14.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14.</p>
a) monitoring an audio source,	<p>D1: D8, Page 1; D4, Page 4.</p> <p>D11: Col. 3, lines 42-50.</p> <p>D12: D13, Page 11, lines 7-8.</p> <p>D14: Col. 4, lines 24-30.</p>	
b) storing audio data from the audio source in a buffer,	<p>D1: D9, Page 18, lines 10-14; D10, Page 9; D2, Page 2.</p> <p>D11: Figure 6, Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47.</p> <p>D12: D13, Page 11, lines 7-8.</p> <p>D14: Col. 5, lines 16-27.</p>	

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c) writing the audio data from the buffer onto a digital audio tape and a random access storage device, and	<p>D1: D8, Page 1; D3, Page 3; D4, Page 4; D10; D9, Page 46, lines 2-20.</p> <p>D11: Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47, Col. 2, lines 29-36; Col. 2, lines 38-41.</p> <p>D12: D13, Page 11, lines 18-21.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	<p>It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.</p>
d) retrieving audio from the random access storage device while audio data is written into the digital audio tape and the random access storage device.	<p>D1: D2, Page 1; D5, Page 1; D10, Page 10.</p> <p>D11: Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 4, lines 33-35, Col. 5, lines 35-41, Col. 6, lines 31-35.</p> <p>D12: D13, Page 11, lines 18-21.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	
2. The method of claim 1 including the further steps of providing the random storage device with a primary partition and writing voice data onto the primary partition in time defined manner.	<p>D1: D6, Page 5; D9, Page 15, lines 3-7, Page 19, lines 6-22.</p> <p>D11: Col. 15, lines 13-16, Col. 19, line 13 – Col. 20, line 39.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.</p> <p>It would have been obvious to one of</p>

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		<p>ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.</p> <p>It would have been obvious to incorporate the partitioned random access storage device and writing in a time defined manner of D1 with the systems of D11 and D12 and/or D14 to retrieve data efficiently and precisely while operating with a single buffer.</p>
<p>3. The method of claim 2 further including the further steps of providing the random access device with a secondary partition and writing an index table in the secondary partition to indicate location of audio data in the primary partition.</p>	<p>D1: D9, Page 15, lines 12-23, Page 19, line 17 – Page 20, line 14, Page 18, line 25 – Page 19, line 15, Page 15, lines 1-8; D10, Pages 12-13</p> <p>D11: Col. 17, lines 30-54.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.</p> <p>It would have been obvious to incorporate the partitioned random access storage device and writing in a time defined manner of D1 with the systems of D11 and D12 and/or D15 to retrieve data efficiently and precisely while operating with a</p>

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'371 Claim	Prior Art Reference(s)	Invalidity Bases
		single buffer.
4. The method of claim 3 further including the step of providing the secondary partition with a record session table, storing start and end times of recording session, and index start and end entries of the index table to indicate location in the index table of selected audio.	D1: D9, Page 17, line 24 – Page 20, line 14, Page 20, line 14, Page 22, lines 18-25, Page 15, lines 1-8, Page 18, lines 18-20, Page 17, line 24 – Page 19, line 15; D10, Pages 13-14.  D11: Col. 17, lines 30-54; Col. 2, lines 29-48.  D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.  This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15 and/or D16.  It would have been obvious to incorporate the index table of D15 and/or D16 with the system of D11 and/or D12 and/or D14 to store and retrieve data more precisely.
5. In a system for processing audio having	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10; Page 15, lines 12-23, Page 22, lines 10-13.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.  This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15.  This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15 and/or D16.
an interface for receiving audio from an audio source,	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page 15, lines 12-23, Page 22, lines 10-13.	
a digital signal processor in communication with the interface for compressing the audio signals,	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, D10, Page 16.	
a controller in communication with the digital signal processor for receiving audio therefrom and arranging data in a prescribed order,	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page, 22, lines 10-13; D10, Page 16.	
a supervisor in communication with said controller accessing data from said system, and	D1: D9, Page 15, lines 12-23, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page, 22, lines 10-13; D10, Page 16.	
a buffer in communication with the controller for receiving arranged audio from the controller, the improvement comprising:	D1: D9, Page 10, line 13 – Page 11, line 10, Page 18, lines 10-14, Page 15, lines 13-23, Page 17, lines 7-20; D2, page 2; D10, Page 9.	
a digital audio tape drive unit in	D1: D9, Page 10, line 13 – Page 11,	It would have been obvious to one of

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communication with the buffer for receiving arranged audio data from the buffer,	<p>line 10, Page 18, lines 10-14, Page 15, lines 13-23, Page 17, lines 7-20; D2, Page 2; D10, Page 17.</p> <p>D11: Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47, Col. 2, lines 29-36, Col. 2, lines 38-41, Col. 3, lines 31-47, Col. 7, lines 26-33.</p> <p>D14: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D12: D13, Page 11, lines 18-21</p>	<p>ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.</p>
a random access storage device, and	<p>D1: D4, NSDE008308, D9, Page 14, lines 9-25; D10, Page 17. ✓</p> <p>D11: Col. 2, lines 32-36, Col. 17, lines 18-54.</p> <p>D14: Col. 3, lines 17-27, Col. 2, lines 47-54.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	
a pair of pointers providing communication between said buffer and random storage device, the first of said pointers operative for transmitting audio data to said random access storage device from said buffer and the second of said pointers being operative to send audio data from said random access storage device to said controller.	<p>D1: D9, Page 15, lines 12-23, Page 16, lines 8-19, Page 19, line 20 – Page 22, line 13; D3, Pages 2-3.</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41, Col. 4, lines 33-35, Col. 6, lines 31-35.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D19: Col. 2, line 62 – Col. 3, line 21, Col. 4, lines 11-33.</p>	<p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 with the system of D11 and/or D12 and/or D14 to retrieve data efficiently and precisely while operating with a single buffer.</p>
6. The system of claim 5 further including a speaker in communication with said controller for playing audio	<p>D1: D2; D3, Page 3, Page 7; D9, Page 10, line 13 – Page 11, line 2, D10, Page 18.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C.</p>

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retrieved from said random access storage device.	D11: Col. 2, lines 29-49, Col. 3, lines 53-55.	<p>§103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D16.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D16.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 with the random access storage device of D1 and/or D14 to retrieve data efficiently and precisely while operating with a single buffer.</p>
7. The system of claim 6 wherein said random access storage device has a primary partition for storing recorded audio data and a secondary partition for storing means for locating selected audio data stored on said primary partition, said second pointer being alternately in communication with said first partition and said second partition.	<p>D1: D9, Page 15, lines 1-8, lines 12-23, Page 19, line 17 – Page 20, line 14 D9, Page 18, line 25 – Page 19, line 15, Page 16, lines 8-19; D10, Pages 12-14.</p> <p>D11: Col. 2, lines 29-49.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15 and/or D16.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15 and/or D16.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the partitioned random access device of D15 and/or D1 and/or D14 with the system of D11 to retrieve data efficiently and precisely while operating with a single buffer.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 and/or D1 and/or D14 with the system of D11 to retrieve data efficiently and precisely while operating with a single buffer.</p>
8. An audio data storage device, comprising:	<p>D1: D3, Page 3.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D16.</p>
a random access storage device having a primary partition for	D1: D5, Page 1; D2, Page 1; D3, Page 3; D8, Page 1; D9, Page 46, lines 2-20,	It would have been obvious to incorporate the index table of D15

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'371 Claim	Prior Art Reference(s)	Invalidity Bases
storing audio data and a secondary partition for storing means for locating data on said primary partition and	<p>Page 19, line 17 – Page 20, line 14, Page 18, line 25 – Page 19, line 15, Page 15, lines 1-8; D10, Pages 12-13</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 2, lines 47-54.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p>	and/or D16 with the system of D11 and/or D12 and/or D14 to store and retrieve data more precisely.
a pair of pointers in communication with said random access memory, a first of said pointers being operated to transmit data to said random access storage device and the second of said pointers being operative to retrieve audio data from said random access storage device.	<p>D1: D9, Page 15, lines 12-23, Page 19, line 17 – Page 20, line 14, Page 18, line 25 – Page 19, line 15; D10, Pages 12-13, Pages 15-16.</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41, Col. 4, lines 33-35, Col. 6, lines 31-35.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D19: Col. 2, line 62 – Col. 3, line 21, Col. 4, lines 11-33.</p>	It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 with the system of D11 and/or D12 and/or D14 to retrieve data efficiently and precisely while operating with a single buffer.

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'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
	<p>D1: Sale of Eyretel e1000, sold in the U.S. as of at least October, 1992. See 30(b)(6) Deposition of Chris Blair in Dictaphone Corp. vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143.</p> <p>D2: e1000 Circuit Diagrams (illustrating the hardware of the D1 sale).(WSNSDE0013861-94)</p> <p>D3: "E1000/E500 Recorder: Engineer Familiarisation" (illustrating the hardware of the D1 sale.)( WSNSDE0015161-98)</p> <p>D4: U.S. Patent No. 5,724,738, to Daly et al., filed on December 31, 1991. (WSNSDE0008620-5) ✓</p> <p>D5: "Digital Audio Tape For Data Storage", IEEE Spectrum, October, 1989. (WSNSDE0010785-9) ✓</p>	
1. A modular digital recording logger, comprising:	<p>D1: D2 and D3.</p> <p>D4: Col. 1, lines 28-58.</p>	<p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D1 (evidenced by D1-D3).</p> <p>Claim 1 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.</p>
a housing;	<p>D1: D2, and D3 Page 9.</p> <p>D4: Col. 2, lines 15-19, Col. 3, lines 28-32.</p>	
at least two circuit modules in said housing for converting analog voice signals to digital voice signals, each of said circuit modules including at least two terminals for receiving said analog voice signals, each of said terminals being capable of receiving said analog voice signals for recording a two-way conversation;	<p>D1: D2, and D3 Pages 2-5.</p> <p>D4: Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.</p>	
a circuit in said housing for compressing said digital voice signals received from each of said circuit modules	<p>D1: D2, and D3 Page 6.</p> <p>D4: Col. 2, line 65 – Col. 3, line 2.</p>	

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'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
to provide compressed voice data;		
a first bus in said housing for providing communication between said circuit module and said compressing circuit;	D1: D2, and D3 Pages 2-7. D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus; and	D1: D2, and D3 Pages 2-7. D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
a digital audio tape (DAT) drive for storing said compressed voice data.	D1: D2 and D3 Pages 2, 6-7, and 13-15. D5: Entire Article.	The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer of D4, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for the purpose of backup storage and archiving of digital data.  D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.
2. The modular digital recording logger of claim 1, further including a clock in communication with said computer.	D1: D2 and D3. D4: Col. 2, lines 15-19.	Claim 2 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 2 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1.
3. The modular digital recording logger of claim 1, further including a speaker in communication with at least one circuit module.	D1: D2 and D3 Pages 8-9.	Claim 3 is invalid under 35 U.S.C. §102(b) as anticipated by D1.
4. The modular digital	D1: D2, D3 pages 2, 11-16.	Claim 4 is invalid under 35 U.S.C.

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'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
recording logger of claim 1, further comprising a hard disk drive in said housing for storing and reproducing said compressed voice data.	D4: Col. 2, lines 15-19; Col. 1, lines 55-58.	§102(b) as anticipated by D1.  Claim 4 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 1.
5. The modular digital recording logger of claim 4, further comprising: a computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals; and	D1: D2 and D3 Pages 2, 6-7, and 11-15.	Claim 5 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 5 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive.	D1: D2 and D3 Pages 2, 6-7, and 11-15.	One or more buses may be added to D4 to communicate with the DAT in addition to the hard disk drive, which is a matter of design choice. It would have been obvious to one of ordinary skill in the art to use a single bus to reduce the number of communication channels required to supply digital data to the DAT and hard disk, as in D1.
6. The modular digital recording logger of claim 1, wherein said first bus is a time division multiplexing (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	Claim 6 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 6 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
7. The modular digital recording logger of claim 1, wherein said second bus is a small computer system interface (SCSI) bus and further comprising a SCSI adapter for connecting said computer to said SCSI bus.	D1: D2, and D3 Pages 2-7.	Claim 7 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 7 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
8. The modular digital recording logger of claim 1, wherein said compressing circuit is a processor.	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	Claim 8 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 8 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
10. The modular digital	D1: D2, and D3 Pages 2-7.	Claim 10 is invalid under 35 U.S.C.

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'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
recording logger of claim 7, further including a random access memory (RAM) for storing said compressed voice data before it is transmitted to the SCSI adapter.		§102(b) as anticipated by D1.  Claim 10 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
11. A network system of modular digital recording loggers, comprising:	D1: D2, and D3 Pages 2, 17.	Claim 11 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 11 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.
at least two digital recording loggers for logging voice conversations, each of said recording loggers comprising:	D1: D2, and D3 Pages 2, 17.	It would have been obvious to one of ordinary skill in the art to utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access to stored digital voice signals on remote computers or devices, as in D1.
a housing;	D1: D2, and D3 Page 9.  D4: Col. 2, lines 15-19, Col. 3, lines 28-32.	
a circuit in said housing for converting analog voice signals to and from digital voice signals, said circuit modules including at least two terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,	D1: D2, and D3 Pages 2-5.  D4: FIG. 1; Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.	
a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data,	D1: D2, and D3 Page 6.  D4: Col. 2, line 65 – Col. 3, line 2.	
a first bus in said housing for providing communication between said circuit module and said compressing circuit,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	

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'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
a digital audio tape (DAT) drive for storing said compressed voice data,	D1: D2 and D3 Pages 2, 6-7, and 13-15.  D5: Entire Article.	D1 teaches a DAT drive for use in the system of D4. The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for backup storage and archiving digital data.  D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.
a hard disk drive in said housing for storing and reproducing said compressed voice data,	D1: D2, D3 pages 2, 11-16.  D4: Col. 2, lines 15-19; Col. 1, lines 55-58.	
a first computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals, and	D1: D2 and D3 Pages 2, 6-7, and 11-15.	
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive;	D1: D2 and D3 Pages 2, 6-7, and 11-15.	One or more buses may be added to D4 to communicate with the DAT in addition to the hard disk drive, which is a matter of design choice. It would have been obvious to one of ordinary skill in the art to use a single bus to reduce the number of communication channels required to supply digital data to the DAT and hard disk, as in

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
		D1.
a second computer for processing compressed digital voice signals received from each of said recording loggers; and	D1: D2 and D3 Pages 2, 17.	It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital voice signals from a single location.
a third bus connecting each of said recording loggers to said second computer.	D1: D2 and D3 Pages 2, 17.	It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital voice signals from a single location.
12. The network system of claim 11, further comprising a clock in communication with said first computer.	D1: D2 and D3. D4: Col. 2, lines 15-19.	Claim 12 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 12 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.
13. The network system of claim 11, wherein said third bus is a local area network (LAN) bus.	D1: D2, D3 Pages 2, 12-17.	Claim 13 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1.  RS 485 serial connections, which can carry compressed voice data, are LANs. Alternatively, if RS485 is not a LAN, replacing RS485 with a LAN would have been obvious to one of ordinary skill in the art as a matter of design choice.
14. The network system of claim 13, wherein said second computer and each of said recording loggers further include a LAN adapter for providing connection to said LAN bus.	D1: D2, D3 Pages 2, 12-17.	Claim 14 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1.  RS 485 serial connections, which can carry compressed voice data, are LANs. Alternatively, if RS485 is not a LAN, replacing RS485 with a LAN would have been obvious to one of ordinary skill in the art as a matter of design choice.
15. The network system of	D1: D2, and D3 Pages 2-7.	Claim 15 is invalid under 35 U.S.C.

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
claim 11, wherein said first bus is a time division multiplexed (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.	D4: FIG. 1, Col. 2, line 58 to Col. 3, line 8.	<p>§102(b) as anticipated by D1.</p> <p>Claim 15 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 11.</p>
16. The network system of claim 11, wherein said second bus is a small computer system interface (SCSI) bus and further comprising a SCSI adapter for connecting said first computer to said SCSI bus.	<p>D1: D2, and D3 Pages 2-7.</p> <p>D4: Col. 2, lines 18-57.</p>	<p>Claim 16 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 16 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 11.</p> <p>Additionally, one or more buses may have been used to communicate with the hard disk drive and DAT, the type of which is an obvious design choice to one of ordinary skill in the art.</p>
17. The network system of claim 16, further comprising a random access memory (RAM) for storing said compressed voice data before it is transmitted to the SCSI adapter.	<p>D1: D2, and D3 Pages 2-7.</p> <p>D4: Col. 2, lines 18-57.</p>	<p>Claim 17 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 17 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 11.</p>
18. The network system of claim 11, wherein said compressing circuit is a processor.	<p>D1: D2, and D3 Pages 2-7.</p> <p>D4: FIG. 1, Col. 2, line 58 to Col. 3, line 8.</p>	<p>Claim 18 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 18 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 11.</p>
20. The network system of claim 11, wherein said second computer is a workstation.	D1: D2, and D3 Pages 2, 17.	<p>Claim 20 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 20 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1.</p> <p>It would have been obvious to one of ordinary skill in the art utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access and replay to stored digital voice signals on remote devices, as in D1, to permit a distributed system of recorders.</p>
21. The network system of	D1: D2, and D3 Pages 2, 17.	Claim 21 is invalid under 35 U.S.C.

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
claim 11, further comprising a speaker in communication with said second computer for reproducing said analog voice signals.		<p>§102(b) as anticipated by D1.</p> <p>Claim 21 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1.</p> <p>It would have been obvious to one of ordinary skill in the art to utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access and replay to stored digital voice signals on remote devices, as in D1, to permit a distributed system of recorders.</p>
22. A method of manufacturing a modular digital recording logger, comprising the steps of:	<p>D1: D2 and D3.</p> <p>D4: Col. 1, lines 28-58.</p>	<p>Claim 22 is invalid under 35 U.S.C. §102(b) as anticipated by D1 (evidenced by D1-D3).</p> <p>Claim 22 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.</p>
selecting a number of circuit modules for converting analog voice signals to and from digital voice signals, each of said circuit modules including at least two terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation;	<p>D1: D2, and D3 Pages 2-5.</p> <p>D4: FIG. 1; Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.</p>	
installing said selected number of said circuit modules in a housing;	<p>D1: D2, and D3 Page 9.</p> <p>D4: Col. 2, lines 15-19, Col. 3, lines 28-32.</p>	
installing a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data;	<p>D1: D2, and D3 Page 6.</p> <p>D4: Col. 2, line 65 – Col. 3, line 2.</p>	
installing a first bus in said housing for providing communication between said circuit module and said	<p>D1: D2, and D3 Pages 2-7.</p> <p>D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.</p>	

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
compressing circuit;		
installing a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus; and	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
installing a digital audio tape (DAT) drive in said housing for storing and reproducing said compressed voice data.	D1: D2 and D3 Pages 2, 6-7, and 13-15.  D5: Entire Article.	The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer of D4, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for the purpose of backup storage and archiving of digital data.  D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.
23. The method of claim 22, further comprising the steps of connecting to said comprising circuit a hard disk drive for storing and reproducing said compressed voice data.	D1: D2, D3 pages 2, 11-16.  D4: Col. 2, lines 15-19 ; Col. 1, lines 55-58.	Claim 23 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 23 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 22.
24. A method of networking a plurality of digital recording loggers, comprising the step of:	D1: D2, and D3 Pages 2, 17.	Claim 24 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 24 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.
selecting a number of modular digital recording loggers for logging voice conversations, each of said recording loggers comprising:	D1: D2, and D3 Pages 2, 17.	It would have been obvious to one of ordinary skill in the art utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access to stored digital voice signals on remote

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
		devices, as in D1.
a housing;	D1: D2, and D3 Page 9.  D4: Col. 2, lines 15-19, Col. 3, lines 28-32.	
a circuit in said housing for converting analog voice signals to and from digital voice signals, said circuit including a plurality of terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,	D1: D2, and D3 Pages 2-5.  D4: FIG. 1; Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.	
a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data,	D1: D2, and D3 Page 6.  D4: Col. 2, line 65 – Col. 3, line 2.	
a first bus in said housing for providing communication between said circuit module and said compressing circuit,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
a multiplexer circuit in said housing for providing communication between said processor and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.	
a digital audio tape (DAT) drive for storing and reproducing said compressed voice data,	D1: D2 and D3 Pages 2, 6-7, and 13-15.  D5: Entire Article.	D1 teaches a DAT drive for use in the system of D4. The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
		<p>backup storage and archiving digital data.</p> <p>D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.</p>
a hard disk drive for storing and reproducing said compressed voice data,	<p>D1: D2, and D3 Pages 2, 11-16.</p> <p>D4: Col. 2, lines 15-19; Col. 1, lines 55-58.</p>	
a first computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals, and	D1: D2 and D3 Pages 2, 6-7, and 11-15.	
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive;	D1: D2 and D3 Pages 2, 6-7, and 11-15.	<p>One or more buses may be added to D4 to communicate with the DAT in addition to the hard disk drive, which is a matter of design choice. It would have been obvious to one of ordinary skill in the art to use a single bus to reduce the number of communication channels required to supply digital data to the DAT and hard disk, as in D1.</p>
installing said selected number of said recording loggers;	D1: D2, and D3 Pages 2, 17.	<p>It would have been obvious to one of ordinary skill in the art to utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access to stored digital voice signals on remote devices, as in D1.</p>
installing a second computer for processing compressed digital voice signals received from each of said recording loggers; and	D1: D2 and D3 Pages 2, 17.	<p>It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital voice signals from a single location.</p>
installing a third bus connecting each of said recording loggers to said	D1: D2 and D3 Pages 2, 17.	<p>It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing</p>

## U.S. Pat. No. 5,819,005 Invalidity Chart

'005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
second computer.		systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital voice signals from a single location.
25. The method of claim 24, wherein said third bus is a local area network (LAN) bus.	D1: D2, D3 Pages 2, 12-17.	<p>Claim 25 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1.</p> <p>RS 485 serial connections, which can carry compressed voice data, are LANs. Alternatively, if RS485 is not a LAN, replacing RS485 with a LAN, would have been obvious to one of ordinary skill in the art as a matter of design choice.</p>
26. The method of claim 25, wherein said second computer and each of said recording loggers further include a LAN adapter for providing connection to said LAN bus.	D1: D2, D3 Pages 2, 12-17.	<p>Claim 26 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1.</p> <p>RS 485 serial connections, which can carry compressed voice data, are LANs. Alternatively, if RS485 is not a LAN, replacing RS485 with a LAN, would have been obvious to one of ordinary skill in the art as a matter of design choice.</p>

# **EXHIBIT BB**



"Daniel A. Kent"  
<dak@fr.com>

12/21/2006 04:04 PM

To <JDrayton@kayescholer.com>

cc <ddinapoli@kayescholer.com>; "John Hamann"  
<Hamann@fr.com>; <JArnold@kayescholer.com>;  
<jingersoll@ycst.com>; "William Marsden"

bcc

Subject RE: NICE v Witness (DE) - proposal re e-discovery

Joe:

I will address your points in order for clarity.

1. Given your agreement to the latest draft of the protective order, we will submit it to the court unless you inform us otherwise.
2. It appears we have agreement that drafts of expert reports and communications with experts about those drafts (and not relied upon by the expert) will not be discoverable in this case, at least for any expert other than Dr. Blair. As for Dr. Blair, if we decide to use him as a testifying expert, will you at least agree that any drafts of expert reports exchanged with Dr. Blair in this case would be non-discoverable? If not, please explain the concern so we can address it.
3. We, too, will cross designate from the other cases as soon as the P.O. is entered, as we have discussed previously.
4. Your response to our proposal about the exchange of electronic data is confusing. The electronic data we possess from Witness Systems comes from at least two sources: Witness Systems' current Knowledge Base database, and electronic documents from Witness Systems' UK (formerly Eyretel SourceSafe. As I understand it, these sources are all currently accessible within the company, contain other, extraneous information, and are used in connection with Witness Systems' ongoing business. We have identified and obtained electronic copies of the likely locations within those sources that we believe reasonably may contain relevant documents. Despite these efforts, the volume data remains in the hundreds of gigabytes. Because these materials are stored on active servers, we have not imaged the servers, instead identifying likely storage locations for discoverable documents and creating electronic copies on external hard drives. This is different from the situation presented by the Dictaphone server you have in your firm's possession, but is likely similar to the situation you have with regard to the responsive NICE documents we discussed yesterday. We still await your response to our discussion about the production of NICE documents concerning NICE products that practice the patents in suit. Given the large volumes of documents to be produced by both sides, then, it makes no sense for each side to spend hundreds of thousands of dollars to produce TIF images, also as we have discussed. Your insistence on producing NICE's documents in TIF format suggests NICE intends to exclude from production the vast amount of responsive documents concerning NICE's products that practice any claim of the asserted patents (either that, or you have not yet collected responsive documents and contacted a vendor to get an estimate of TIF creation. If I misunderstand your letter on this point, please respond immediately as we intend to address the issue with the Court right away.

Our proposal remains to exchange electronic data in bulk, whether from the inactive Dictaphone server, or from the parties' active databases. We are not suggesting that NICE or Witness exchange images of their respective active servers, if that is what is driving your concerns. Only the Dictaphone server should be provided as a meta-data preserving copy, since you and apparently NICE are unaware of how to access the data. For our part, we remain ready for you to review and inspect the data we have identified as potentially responsive in our offices, upon reasonable notice. You may then designate for TIF imaging anything you like, at your expense. In contrast, our proposal would allow the parties to perform such inspection of each other's electronic documents in their own offices, and would allow the parties to then print off, number and designate (and provide to the other side) only those documents they deem useful.

Please revisit our proposal in light of the above information. I am available to discuss with you and Scott on Friday December 22, or anytime next week.

Dan

---

**From:** JDrayton@kayescholer.com [mailto:JDrayton@kayescholer.com]  
**Sent:** Wednesday, December 20, 2006 8:12 PM  
**To:** Daniel A. Kent  
**Cc:** ddinapoli@kayescholer.com; John Hamann; JArnold@kayescholer.com; jingersoll@ycst.com; William Marsden; msharp@ycst.com; Nick Setty; slindvall@kayescholer.com  
**Subject:** Re: NICE v Witness (DE) - proposal re e-discovery

Dan and John,

I write to follow up on our conversation this morning regarding the production of electronically stored information as well as several other outstanding discovery issues.

First, we agree to the latest version of the protective order circulated by John on December 15, 2006.

Second, we are amenable to your agreement on expert discovery with the caveat that it should not apply to Christopher Blair or to any of the litigations currently pending in the N.D. Georgia between the parties.

Third, I am confirming our agreement to cross-designate the productions in the actions N.D. Georgia as produced in this action upon entry of a protective order in this case.

Fourth, it is our understanding that Witness has one on-line server in its possession in the U.S. which contains between 200 and 500 gigabytes of relevant information and two or more on-line servers in England which contain relevant information approximately 500 gigabytes of relevant information concerning Eyretel products, a company acquired by Witness. As for NICE, we have informed you that NICE has a server, in its possession from its acquisition of Dictaphone, that is off-line and not used by NICE to support any of its business operations.

In order to minimize the costs associated with the production of information on those servers as TIFF files, you have proposed that the parties image these servers and produce a mirror copy of the servers as they presently exist. Such a production would result in the production of native files as opposed to TIFF files.

As Scott Lindvall mentioned on our call today, without waiving any of the present obligations or rights of the parties in connection with the production of electronically stored information, NICE is amenable to an exchange of mirror image files of the above respective servers for a period of one week so that NICE can make a informed decision to accept or reject your proposal. If such an arrangement is acceptable to Witness, the exchange should be subject to the terms of the protective agreement referenced above and the mirror image files shall be treated as source code.

Regardless of how the parties ultimately handle the production of information related to the aforementioned servers, NICE intends to produce all responsive electronically stored information on its on-line servers as TIFF files, consistent with the practice of the parties currently pending in the N.D. Georgia between and the Court's default e-discovery rules. We would expect Witness to do the same for electronically stored information not contained on

the servers you have identified.

Joseph M. Drayton  
Kaye Scholer LLP  
425 Park Avenue  
New York, NY 10022  
(212) 836-7177  
(212) 836-6576 (fax)

"Daniel A. Kent" <dak@fr.com>

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To: <JDrayton@kayescholer.com>; <slindvall@kayescholer.com>  
cc: <ddinapoli@kayescholer.com>; <JArnold@kayescholer.com>; "William  
Marsden" <marsden@fr.com>; <msharp@ycst.com>; "Nick Setty"  
<Setty@fr.com>; <jingersoll@ycst.com>; "John Hamann"  
<Hamann@fr.com>  
Subject: Re: NICE v Witness (DE) - proposal re e-discovery

To make it easier on everyone, please use my call in number below.

Toll Free Dial In Number: (877) 287-0283  
PARTICIPANT CODE: 841941

Dan

-----  
Sent from my BlackBerry Wireless Handheld

----- Original Message -----

From: Daniel A. Kent  
To: 'JDrayton@kayescholer.com' <JDrayton@kayescholer.com>;  
'slindvall@kayescholer.com' <slindvall@kayescholer.com>

Cc: 'ddinapoli@kayescholer.com' <ddinapoli@kayescholer.com>;  
'JArnold@kayescholer.com' <JArnold@kayescholer.com>; William Marsden;  
'msharp@ycst.com' <msharp@ycst.com>; Nick Setty; 'jingersoll@ycst.com'  
<jingersoll@ycst.com>; John Hamann  
Sent: Tue Dec 19 19:39:24 2006  
Subject: Re: NICE v Witness (DE) - proposal re e-discovery

11 am Wed is fine. You and Scott may call me at my direct number below.  
Dan  
Daniel A. Kent  
Principal  
Fish & Richardson P.C.  
M: 678.457.3545  
D: 404.724.2828

-----  
Sent from my BlackBerry Wireless Handheld

----- Original Message -----  
From: JDrayton@kayescholer.com <JDrayton@kayescholer.com>  
To: Daniel A. Kent; SLindvall@kayescholer.com <SLindvall@kayescholer.com>  
Cc: ddinapoli@kayescholer.com <ddinapoli@kayescholer.com>;  
JArnold@kayescholer.com <JArnold@kayescholer.com>; William Marsden; Melanie  
Sharp <msharp@ycst.com>; Nick Setty; Josy Ingersoll <jingersoll@ycst.com>;  
John Hamann  
Sent: Tue Dec 19 18:34:06 2006  
Subject: Re: NICE v Witness (DE) - proposal re e-discovery

Dan,

We can speak with you tomorrow at 11:00 a.m. Please confirm your  
availability.

---

----- Original Message -----  
From: "Daniel A. Kent" [dak@fr.com]  
Sent: 12/19/2006 06:04 PM  
To: Scott Lindvall; Joseph Drayton  
Cc: Daniel DiNapoli; Joshua Arnold; "William Marsden" <marsden@fr.com>;  
<msharp@ycst.com>; "Nick Setty" <Setty@fr.com>; "Josy Ingersoll"  
<jingersoll@ycst.com>; "John Hamann" <Hamann@fr.com>  
Subject: RE: NICE v Witness (DE) - proposal re e-discovery

Scott and Joe:

I am writing to make sure your team understands fully our proposal concerning  
discovery of electronic documents.

The background of our proposal is this: We understand that you have in your  
possession an old Dictaphone server with large volumes of data on it. We  
received today a 12,000 plus page index of the directory of that server in

non-searchable format. We also understand you have 400-600 boxes of Dictaphone documents, and we have also received a 9-page index of those documents. In addition, we expect NICE will have substantial volumes of responsive documents in its own right. Because NICE has not yet provided any meaningful focus to the products accused or claims asserted, the volume of potentially discoverable electronic documents from both parties is extremely large. As a result, we propose the following:

1. The parties agree to exchange native format electronic files in bulk. This would take the form of an exchange of hard drive(s) with large volumes of data that either side could search for responsive documents. All such files would be treated as outside counsel's eyes only. Source code would continue to be covered by and produced under the protective order.
2. We would agree to a claw-back provision for any inadvertently privileged communication contained in the bulk production.
3. The parties would agree that a receiving party would create and provide to the producing party PO-designated, searchable electronic copies of any document the party wishes to rely upon, at some reasonable time before such documents are either used in a deposition, attached to a brief, or relied upon in discovery or otherwise.

We are happy to discuss this proposal with you at your convenience, as well as revisions or alternatives you may have in mind. Given our time frames, please let me know when the both of you are available for such a call. I am available this week and next, except for December 25. I look forward to hearing from you.

Dan

Daniel A. Kent / Principal / ~ Fish & Richardson P.C. / 1180 Peachtree Street, NE / 21st Floor / Atlanta, GA 30309  
Main: 404.892.5005 / Direct: 404-724-2828 / Fx: 404.892.5002 / Mobile: 678-457-3545 / Email: kent@fr.com <mailto:kent@fr.com> / Web: <http://www.fr.com> <<http://www.fr.com/>>

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IRS CIRCULAR 230 DISCLOSURE: To ensure compliance with Treasury Department regulations, we inform you that any U.S. federal tax advice contained in this correspondence (including any attachments) is not intended or written to be used, and cannot be used for the purpose of (i) avoiding penalties that may be imposed under the U.S. Internal Revenue Code or (ii) promoting, marketing or recommending to another party any transaction or matter addressed herein.

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# **EXHIBIT CC**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

NICE SYSTEMS, INC. and  
NICE SYSTEMS LTD,

*Plaintiffs and Counterclaim  
Defendants,*

v.

WITNESS SYSTEMS, INC.

*Defendant and Counterclaim  
Plaintiff.*

C.A. No. 1:06-CV-00311-JJF

**DEFENDANT WITNESS SYSTEMS, INC. S SUPPLEMENTAL  
RESPONSES TO PLAINTIFFS NICE SYSTEMS, INC. S AND NICE  
SYSTEMS LTD. S INTERROGATORIES 1(a), 2 and 2(a)**

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure and the Local Rules of the District of Delaware, Defendant Witness Systems, Inc. ( Witness Systems ) provides the following supplemental objections and responses to the Interrogatories propounded by Plaintiffs NICE Systems, Inc. and NICE Systems Ltd. (collectively, NICE ). Subject to and without waiving its previously stated objections, Witness Systems incorporates by reference its responses and objections to NICE s First and Second Sets of Interrogatories as if set forth verbatim herein, and for brevity provides only the supplemental information for the identified interrogatories below:

**SUPPLEMENTAL RESPONSES**

**INTERROGATORY NO. 1(a):**

On a claim-by-claim basis and for each claim element, state whether you contend that NICE's response to Witness' Interrogatory No. 13 set forth in Exhibit A to that document does not demonstrate infringement of the Accused Products. For each claim element that you contend NICE has not demonstrated infringement by each Accused Product, on a claim-by-claim basis in a chart, describe in detail the factual and legal bases as to why the specific infringement contention identified in

**NICE's response to Witness' Interrogatory No. 13 set forth in Exhibit A to that document does not demonstrate infringement of the Accused Products.**

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 1(a):**

Witness Systems incorporates by reference its General Objections as if fully stated herein. Witness Systems also objects to this Interrogatory as vague and ambiguous because NICE has failed to specify the products and versions accused of infringement sufficiently to identify those products falling within its definition of "Accused Product." Witness Systems again requests that NICE clarify what products and which versions it accuses infringe. Witness Systems also objects to this Interrogatory to the extent it seeks information protected by the attorney-client privilege, work product doctrine, and/or any other applicable privilege. Witness Systems further objects to this Interrogatory to the extent it purports to be duplicative of an Interrogatory NICE earlier served, which it is not. Thus, this Interrogatory counts as a separate Interrogatory. Witness Systems further objects to this Interrogatory to the extent it is premature because discovery is still ongoing and the claims of the Patents-in-Suit have yet to be construed. Witness Systems further objects to this Interrogatory to the extent it calls for pure legal conclusions and/or to the extent that it seeks information that will be the subject of expert opinion testimony. Subject to and without waiving the foregoing objections, Witness Systems refers NICE to Exhibit A to its original response to this interrogatory, as well as Supplemental Exhibit A, attached hereto, which addresses the newly asserted claims of the 079 Patent. Witness Systems reserves its right to amend and/or supplement this response as discovery and Witness Systems investigations continue and after any claim construction ruling.

**INTERROGATORY NO. 2:**

**Describe in detail the factual and legal bases for Witness' contention that [the claims of the 738, 371, 005, 345, 372, 370,'920, 079, and 109 patents are invalid for failure to comply with the United States patent laws, 35 U.S.C. §§ 1, et seq., including without limitation § 102, 103, and/or 112. The detailed description of such factual and legal bases should include, without limitation, an identification of which aspect(s) of 35 U.S.C. § 112 Witness contends the Patents-In-Suit do not meet and an identification and description of every document, tangible item and item of information that Witness has relied upon or intends to rely upon as support for its contention.**

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 2:**

Witness Systems incorporates by reference its General Objections as if fully stated herein. Witness Systems also objects to this Interrogatory to the extent that it seeks information that is protected by the attorney-client privilege and/or work product doctrine. Witness Systems also objects to this Interrogatory to the extent it calls for information comprising trade secrets, proprietary information, or other confidential or competitively sensitive technical information. Accordingly, Witness Systems responses are provided subject to the terms of the protective order entered by the Court in this action. Witness Systems also objects to this Interrogatory as vague and ambiguous to the extent it mischaracterizes and purports to state Witness Systems contention. Subject to and without waiving the foregoing objections, Witness Systems provides the following additional invalidating prior art references as set forth below.

In addition to the prior art references listed in its prior response to this interrogatory, Witness Systems believes one or more of the claims of the 345, 370 and 570 Patent are invalid under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 over one or more of the following additional references: Eyretel Unify Computer Telephony Integration (CTI) application (all prior versions); and Eclipse application (all prior versions). In addition to the prior art references listed in its prior response to this interrogatory,

Witness Systems believes one or more of the claims of the '005 Patent are invalid under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 over one or more of the following additional references, either alone or in combination: Racal Rapidax (sold in the U.S. as of at least December 21, 1992); Racal's 'Rapidax' Voice Logging Recorders Offers Instant Message Recall of Multichannel Calls, Transmissions; Rapidax Access Voice Logging Recorder; Rapidax Instant Call Recorder; Rapidax in Surveillance and Security Monitoring; Operator's Manual.; System Manager's Manual.; Rapidax Tape Archive and System Network.; Deposition of Andrew Jackson in Dictaphone Corporation vs. Nice Systems, Ltd. (June 21, 2002), Civil Action 3:00CV1143; Expert Report on the Invalidity 5,396,371 in Dictaphone Corporation vs. Nice Systems, Ltd. (June 21, 2002 ), Civil Action 3:00CV1143.

In addition to the prior art references listed in its prior response to this interrogatory, Witness Systems believes one or more of the claims of the '371 Patent are invalid under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 over one or more of the following additional references, either alone or in combination: The Disk Drive As An Audio Recorder, Hard Disk Recording Conference (May 16-17, 1990); An Experimental Speech Storage and Editing Facility, The Bell System Technical Journal (October 1980); Mediation Brief, Analysis of Prior Art Which Anticipates or Renders Obvious the Claims of U.S. Patent No. 5,396,371, in Dictaphone Corporation vs. Mercom Systems, Inc., Civil Action 3:00CV1143; 4,375,083; JP S62-20460; Memory Space Allocation of Messages in Voice Mail, IBM Technical Disclosure Bulletin (July 1987); A Magnetic Storage Disk Based Digital Audio Recording, Editing and Processing System, 83rd AES Corporation (October 16-19, 1987); A Flexible Digital Sound-Editing Program for Minicomputer

Systems, 68th Convention of the Audio Engineering Society in Hamburg, German, Journal of Audio Engineering Society (March 17-20, 1981); NICE's Markman Brief in Dictaphone Corporation vs. Nice Systems, Ltd., (June 21, 2002), Civil Action 3:00CV1143.

**INTERROGATORY NO. 2(a):**

**On a claim-by-claim basis in a chart, for each prior art reference identified by Witness in response to NICE's Interrogatory No. 2, identify the disclosure in each prior art reference of each limitation of the Asserted Claims in the respective Patent-in-Suit. To the extent that Witness asserts the prior art references support its invalidity defense under 35 U.S.C. § 103, it must further identify any prior art combinations and the motivation to combine those references.**

**SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 2(a):**

Witness Systems incorporates by reference its General Objections as if fully stated herein. Witness Systems also objects to this Interrogatory to the extent it seeks information protected by the attorney-client privilege, work product doctrine, and/or any other applicable privilege. Witness Systems further objects to this Interrogatory to the extent it purports to be duplicative of an Interrogatory NICE earlier served, which it is not. Thus, this Interrogatory counts as a separate Interrogatory. Witness Systems further objects to this Interrogatory to the extent it is premature because discovery is still ongoing and the claims of the Patents-in-Suit have yet to be construed. Witness Systems further objects to this Interrogatory to the extent it calls for pure legal conclusions and/or to the extent it seeks information that will be the subject of expert opinion testimony. Subject to and without waiving the foregoing objections, Witness Systems refers NICE to Supplemental Exhibit B, which identifies additional representative, invalidating prior art for five of the ten asserted patents. Numerous other prior art references also contain the identified disclosures. Witness Systems reserves its right to amend and/or supplement this response as discovery and Witness Systems' investigation continue, and after any claim construction ruling. Witness Systems specifically reserves the right to supplement

and/or amend its response in light of information and materials that it is currently seeking from third parties.

DATED: April 30, 2007

FISH & RICHARDSON P.C.

/s/ Kyle Wagner Compton

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ATTORNEYS FOR DEFENDANT  
WITNESS SYSTEMS, INC.

**CERTIFICATE OF SERVICE**

I hereby certify that on April 30, 2007, I caused to be served "DEFENDANT  
WITNESS SYSTEMS, INC.'S SUPPLEMENTAL RESPONSES TO PLAINTIFFS  
NICE SYSTEMS, INC.'S AND NICE SYSTEMS LTD.'S INTERROGATORIES 1(a), 2  
and 2(a)" on counsel for Plaintiffs as follows:

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/s/ Kyle Wagner Compton

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# **SUPPLEMENTAL EXHIBIT A**

## U.S. Pat. No. 6,959,079 Noninfringement Claim Chart

6,959,079 Claims	Accused Product(s)
1. A monitoring system for monitoring interactions of an agent with customers comprising:	<p>NICE lists the following "Accused Products" for the '079 Patent:</p> <ol style="list-style-type: none"> <li>1) eQuality ContactStore for IP</li> <li>2) eQuality ContactStore</li> <li>3) Witness Quality for Communication Manager</li> <li>4) Impact 360</li> </ol>
a voice logger to receive and record audio of a telephone call of said agent;	NICE cites to Documents 5, 9 and 25 for this claim limitation.
a screen logger to receive and record video screen data associated with interactions of said agent with a computer during the telephone call; and	<p>NICE cites to Documents 5, 9 and 25 for this claim limitation.</p> <p>The cited portions of Documents 5, 9 and 25 fail to show "a screen logger to receive and record video screen data."</p>
an event manager to determine whether said interactions with the computer during the telephone call meet at least one predefined monitoring condition.	<p>NICE cites to Documents 5, 9 and 25 for this claim limitation.</p> <p>The cited portions of Documents 5, 9 and 25 fail to show "an event manager to determine whether said interactions with the computer during the telephone call meet at least one predefined monitoring condition."</p>
3. The monitoring system of claim 1, wherein said event manager is able to instruct said voice logger to begin recording of an audio portion of said telephone call and to instruct said screen logger to begin recording generally in synchronicity with said voice logger at least a portion of said video screen data when said monitoring condition is satisfied.	<p>NICE has failed to present evidence on a claim-by-claim and element-by-element basis sufficient to establish infringement of claim 1, from which the claim depends either directly or indirectly. Accordingly, NICE has failed to show infringement of this claim.</p> <p>NICE cites to Documents 9, 29, and 45 for this claim limitation.</p> <p>The cited portions of Documents 9, 29, and 45 fail to show "said event manager is able to instruct said voice logger to begin recording of an audio portion of said telephone call and to instruct said screen logger to begin recording generally in synchronicity with said voice logger at least a portion of said video screen data."</p>

**U.S. Pat. No. 6,959,079 Noninfringement Claim Chart**

<b>6,959,079 Claims</b>	<b>Accused Product(s)</b>
<p>5. The monitoring system of claim 1, further comprising: an evaluator coupled to said voice logger and to said screen logger to enable design of evaluation forms.</p>	<p>NICE has failed to present evidence on a claim-by-claim and element-by-element basis sufficient to establish infringement of claim 1, from which the claim depends either directly or indirectly. Accordingly, NICE has failed to show infringement of this claim.</p> <p>NICE cites to Documents 5, 9, 37, and 38 for this claim limitation.</p> <p>The cited portions of Documents 5, 9, 37, and 38 fail to show the claimed “evaluator coupled to said voice logger and to said screen logger”.</p>
<p>6. The monitoring system of claim 5, wherein said evaluator is able to perform automated evaluations based on predefined programming.</p>	<p>NICE has failed to present evidence on a claim-by-claim and element-by-element basis sufficient to establish infringement of claims 1 and 5, from which the claim depends either directly or indirectly. Accordingly, NICE has failed to show infringement of this claim.</p> <p>NICE cites to Documents 38 and 39 for this claim limitation.</p> <p>The cited portions of Documents 38 and 39 fail to show the claimed “automated evaluations”.</p>

# **SUPPLEMENTAL EXHIBIT B**

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: U.S. Patent No. 5,048,079, priority date of Aug. 10, 1990, and issue date of Sep. 10, 1991. (WSNSDE0003251-72) D1 discloses a method and apparatus for matching call records with corresponding PBX data using a probability factor.</p> <p>D2: U.S. Patent No. 6,002,753, priority date of Oct. 5, 1994, and issue date of Dec. 14, 1999. (WSNSDE0005882-925) D2 discloses an apparatus and method for exchanging telephone call information between two computers.</p> <p>D3: U.S. Patent No. 5,559,875, priority date of Jul. 31, 1995, and issue date of Sep. 24, 1996. (WSNSDE0004992-5027) D3 discloses a method and apparatus for recording and playback of audio conferences.</p> <p>D4: U.S. Patent No. 5,982, 857, priority date of Oct. 17, 1994, and issue date of Nov. 9, 1999. (WSNSDE0005823-37) D4 discloses a system and method for recording and playback of telephone calls.</p> <p>D5: Blue Cross Blue Shield Eclipse Integration, sold or offered for sale in the U.S. before June 8, 1999.</p> <p>D6: Blue Cross Blue Shield User Guide dated January 29, 1997 (illustrating system of D5) (WSNSDE0012983-92)</p> <p>D7: Application Development Guide - Blue Cross / Blue Shield Eclipse Project Eclipse Modification and Design dated November 25, 1997 (illustrating system of D5) (WSNSDE0012967-82).</p>	

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D8: "Tracking Agent Id through Inter-Site Call Transfers" (illustrating the system of D5) (WSNSDE0012993-4).</p> <p>D9: "E1000 for Windows User Guide" dated July 1997 (illustrating the system of the D5) (WSNSDE0011276-346).</p> <p>D10: Equiserve Recording Proposal presented in the U.S. on May 5, 1999, which before June 8, 1999. (WSNSDE013106)</p> <p>D11: "E-Ware Replay-User Guide" dated November 1998 (illustrating the system of D5 and D10) (WSNSDE011798-844).</p> <p>D12: "Unify System Managers Guide" dated August 1996 (illustrating the system of D10) (WANSDE012044-70).</p>	

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>14. A method for recording information regarding telephone calls with three or more participants and comprising one or more participants and comprising one or more telephone call segments, comprising:</p>		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
(a) receiving audio data regarding one or more telephone call segments;	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	
(b) receiving data regarding telephony events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(c) storing the received audio data regarding telephone call segments;	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 2-25.</p> <p>D10: D10; D11: pp. 2-7 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
(d) storing the received data regarding telephone events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(e) identifying telephone call segments that relate to the same telephone call; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
(f) constructing data representations of lifetimes of telephone calls, wherein said data representations are constructed using data regarding telephony events associated with telephone call segments.	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. . 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
15. The method of claim 14 wherein each data representation of a telephone call comprises: (i) a list of participants in the telephone call; (ii) a list of telephony events regarding the call; (iii) a list containing the time each telephony event occurred; and (iv) the start and end time of the call.	D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D4, col. 5 ll. 14-33.	
	D5: D7, pp. 5-7, 10-12.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
	D10: D10; D11: pg. 2-9; D12: pp. 1-1, 2-1.	The motivation for these combination can be found in Claim 1, above.
	D11: pg. 2-9.	
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
21. The method of claim 14 wherein data regarding telephony events is received from a plurality of sources connected to a telephone switching environment.	D2, col. 4 ln. 59 – col. 5 ln. 5.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D3, Fig. 1.	
	D4, Fig. 6.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D5: D7, pg. 5.	
	D10: D10; D11: pg. 2-9; D12: pp. 1-1, 2-1.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D11: D11: pg. 2-9	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
		The motivation for these combination can be found in Claim 1, above.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
22. The method of claim 14 further comprising the step of using a data representation of a telephone call to display a graphical representation of the telephone call.	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9, ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9.</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

**U.S. Pat. No. 6,728,345 Supplemental Invalidity Chart**

345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>23. The method of claim 15 further comprising the step of using said data representation of a telephone call to display a graphical representation of the telephone call.</p>	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
24. The method of claim 23 wherein the graphical representation comprises a representation of each segment of the call.	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>25. The method of claim 23 wherein the graphical representation comprises a representation of the length of time of each segment of the call.</p>	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
26. The method of claim 22 further comprising the step of displaying a table comprising data from the data representation.	D1, col. 15, ll. 27-60.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D2, Figs. 20A, 20B, 21, 22.	
	D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D5: D11: pg. 2-9	
	D10: D10; D11: pg. 2-9.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
	D11: pg. 2-9	The motivation for these combination can be found in Claim 1, above.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>40. A method for recording information regarding telephone calls comprising one or more telephone call segments, wherein said calls comprise calls wherein at least one participant participates in a plurality of segments, comprising:</p>		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
(a) receiving audio data regarding one or more telephone call segments	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	
and data regarding telephone events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(b) storing the received audio data regarding telephone call segments;	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	

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345 Claim	Prior Art Reference(s)	Invalidity Bases
(c) storing the received data regarding telephony events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>
(d) identifying telephone call segments that relate to one telephone call;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
(e) identifying multiple call segments that have the same participant; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p> <p>It would have been obvious to one of ordinary skill in the art to combine D3 and D4. The motivation for this combination is provided in Claim 1, above.</p>
(f) constructing data representations of lifetimes of telephone calls, wherein each data representation of a telephone call is constructed using data regarding telephony events associated with the telephone call segments of the telephone call.	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. . 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
41. The method of claim 40 wherein a data representation of a telephone call comprises: (i) a list of participants in the telephone call; (ii) a list of telephony events regarding the call; (iii) a list containing the time each telephony event occurred; and (iv) the start and end time of the call.	D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D4, col. 5 ll. 14-33.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
	D5: D7, pp. 5-7, 10-12.	The motivation for these combination can be found in Claim 1, above.
	D10: D10; D11: pg. 2-9; D12: pp. 1-1, 2-1.	
	D11: pg. 2-9.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
42. The method of claim 40 wherein a data representation of a telephone call comprises, for each segment of the call, the location of the stored audio data of that segment.	D3, col. 4, ll. 35-52; col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D4, col. 5 ll. 14-33.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.	
	D10: D10; D11: pp. 1-1, 2-7 – 2-12	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D11: pp. 1-1, 2-7 – 2-12	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
		The motivation for these combination can be found in Claim 1, above.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
43. The method of claim 40 wherein the received audio data and the data regarding telephony events is stored in the same memory.	D3, Fig. 1.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D4, Fig. 1.	
	D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D10: D10; D11: pp. 1-1, 2-7 – 2-12	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D11: pp. 1-1, 2-7 – 2-12.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
		The motivation for these combination can be found in Claim 1, above.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
45. The method of claim 42 wherein a location of stored audio data of each segment comprises the location of a .WAV file containing the audio data.	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 4, ln. 16 - col. 5 ln. 33.</p> <p>D5: D11: pg. 1-1.</p> <p>D10: D10; D11: pg. 1-1.</p> <p>D11: pg. 1-1.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>
46. The method of claim 45 wherein a data representation of a telephone call further comprises an offset within the .WAV file to the start of the stored audio data.	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 4, ln. 16 - col. 5 ln. 33.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
47. The method of claim 40 wherein data regarding telephony events is received from a plurality of sources connected to a telephone switching environment.	D2, col. 4 ln. 59 – col. 5 ln. 5.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D3, Fig. 1.	
	D4, Fig. 6.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D4.
	D5: D7, pg. 5.	
	D10: D10; D11: pg. 2-9; D12: pp. 1-1, 2-1.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D11: pg. 2-9	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
		<p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
48. The method of claim 40 further comprising the step of using a data representation of a telephone call to display a graphical representation of said telephone call.	D2, Figs. 13-18.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D5: D11: pg. 2-9.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
	D10: D10; D11: pg. 2-9.	The motivation for these combination can be found in Claim 1, above.
	D11: pg. 2-9	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
49. The method of claim 41 further comprising the step of using a data representation of a telephone call to display a graphical representation of said telephone call.	D2, Figs. 13-18.	This claim is invalid under 35 U.S.C. § 102(b) as anticipated by D3.
	D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.	This claim is invalid under 35 U.S.C. § 103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D5: D11: pg. 2-9.	This claim is invalid under 35 U.S.C. § 103 as obvious in view of D3 in combination with D4.
	D10: D10; D11: pg. 2-9.	The motivation for these combination can be found in Claim 1, above.
	D11: pg. 2-9	This claim is invalid under 35 U.S.C. § 102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. § 102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. § 102(b) as anticipated by D11.

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345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>50. The method of claim 49 wherein the graphical representation comprises a representation of each segment of the call.</p>	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9.</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
<p>51. The method of claim 49 wherein the graphical representation comprises a representation of the length of time of each segment of the call.</p>	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9.</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

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345 Claim	Prior Art Reference(s)	Invalidity Bases
52. The method of claim 48 further comprising the step of displaying a table comprising data from the data representation.	D1, col. 15, ll. 27-60.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.
	D2, Figs. 20A, 20B, 21, 22.	
	D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.
	D5: D11: pg. 2-9.	
	D10: D10; D11: pg. 2-9.	This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.
	D11: pg. 2-9.	The motivation for these combination can be found in Claim 1, above.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.
		This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.
		This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.

## U.S. Pat. No. 6,785,370 Invalidity Chart

370 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: U.S. Patent No. 5,048,079, priority date of Aug. 10, 1990, and issue date of Sep. 10, 1991. (WSNSDE0003251-72) D1 discloses a method and apparatus for matching call records with corresponding PBX data using a probability factor.</p> <p>D2: U.S. Patent No. 6,002,753, priority date of Oct. 5, 1994, and issue date of Dec. 14, 1999. (WSNSDE0005882-925) D2 discloses an apparatus and method for exchanging telephone call information between two computers.</p> <p>D3: U.S. Patent No. 5,559,875, priority date of Jul. 31, 1995, and issue date of Sep. 24, 1996. (WSNSDE0004992-5027) D3 discloses a method and apparatus for recording and playback of audio conferences.</p> <p>D4: U.S. Patent No. 5,982, 857, priority date of Oct. 17, 1994, and issue date of Nov. 9, 1999. (WSNSDE0005823-37) D4 discloses a system and method for recording and playback of telephone calls.</p> <p>D5: Blue Cross Blue Shield Eclipse Integration, sold or offered for sale in the U.S. before June 8, 1999.</p> <p>D6: Blue Cross Blue Shield User Guide dated January 29, 1997 (illustrating system of D5) (WSNSDE0012983-92)</p> <p>D7: Application Development Guide - Blue Cross / Blue Shield Eclipse Project Eclipse Modification and Design dated November 25, 1997 (illustrating system of D5) (WSNSDE0012967-82).</p>	

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D8: "Tracking Agent Id through Inter-Site Call Transfers" (illustrating the system of D5) (WSNSDE0012993-4).</p> <p>D9: "E1000 for Windows User Guide" dated July 1997 (illustrating the system of the D5) (WSNSDE0011276-346).</p> <p>D10: Equiserve Recording Proposal presented in the U.S. on May 5, 1999, which before June 8, 1999. (WSNSDE013106)</p> <p>D11: "E-Ware Replay-User Guide" dated November 1998 (illustrating the system of D5 and D10) (WSNSDE011798-844).</p> <p>D12: "Unify System Managers Guide" dated August 1996 (illustrating the system of D10) (WANSDE012044-70).</p>	

## U.S. Pat. No. 6,785,370 Invalidity Chart

370 Claim	Prior Art Reference(s)	Invalidity Bases
<p>1. A method for constructing and maintaining data representations of lifetimes of telephone calls comprising one or more segments, audio data for each segment being recorded on one or more recorders, the method comprising:</p>		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. § 102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>D1 and D2 teach storing various types of telephony data. D3 and D4 teach storing audio segments with associated data. One of skill in the art would recognize the types of data disclosed in D1 and/or D2 could be stored in the data storage systems disclosed in D3 and/or D4. The motivation for this combination can be found in the references themselves, which teach the desirability of maintaining data associated with audio segments.</p> <p>Furthermore, one of skill in the art would recognize that the similarities in the teachings of D1 and D2, as well as the similarities in the teachings of D3 and D4, allow for the combination of D1 and D2, as well as the combination of D3 and D4. The motivation for these combinations would be to provide interoperability between the similar systems disclosed in these references.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(a) constructing a call record for at least one telephone call;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided above.</p>
(b) receiving data regarding telephony events associated with one or more telephone calls;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided above.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(c) matching a received telephony event with a constructed call record;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided above.</p>
(d) updating the matching call record based on the received telephony event data; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided above.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(e) combining the updated call record with data indicating the location of recorded audio data for the segment of the call, to obtain a master call record representing the lifetime of the telephone call.	<p>D3, col. 4, ll. 35-52; col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided above.</p>
5. The method of claim 1 wherein the master call record comprises a serial number that identifies the telephone call.	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D5: D11, pg. 2-11.</p> <p>D10: D10; D11, pg. 2-11.</p> <p>D11: pg. 2-11.</p>	<p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
6. The method of claim 1 wherein the call record is updated with data fields describing each participant of the telephone call.	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 1, ln. 52 – col. 2, ln. 15; col. 5, ll. 4-14; col. 5, ln. 57 – col. 6, ln. 6.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5-7, 10-12.</p> <p>D10: D10; D11: pg. 2-9; D12: pp. 1-1, 2-1.</p> <p>D11: pg. 2-9.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. § 102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>
8. The method of claim 1 further comprising the step of assembling and playing back segments of telephone calls using the recorder locations described in the master call record for each telephone call.	<p>D3, col. 5, ln. 30 – col. 11, ln. 22.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D11, pg. 2-11.</p> <p>D10: D10; D11, pg. 2-11.</p> <p>D11: pg. 2-11.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. § 102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
9. The method of claim 1 further comprising the step of using the master call record to display a graphical representation of said telephone call.	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9.</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>
11. The method of claim 9 wherein the graphical representation comprises a representation of each segment of the telephone call.	<p>D2, Figs. 13-18.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>

## U.S. Pat. No. 6,785,370 Invalidity Chart

370 Claim	Prior Art Reference(s)	Invalidity Bases
12. The method of claim 9 further comprising the step of displaying a table comprising data from the master call record.	<p>D1, col. 15, ll. 27-60.</p> <p>D2, Figs. 20A, 20B, 21, 22.</p> <p>D3, Figs. 9A, 9B, 10, 11, 12, 13, 14; col. 9., ln. 60 – col. 11, ln. 22.</p> <p>D5: D11: pg. 2-9</p> <p>D10: D10; D11: pg. 2-9.</p> <p>D11: pg. 2-9</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p>
27. A method for constructing and maintaining data representations of lifetimes of telephone calls comprising two or more segments, audio data for each segment being recorded on one or more recorders, the method comprising the steps of:		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(a) constructing a call record for a telephone call comprising two or more segments;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p> <p>It would have been obvious to one of ordinary skill in the art to combine D3 and D4. The motivation for this combination is provided in Claim 1, above.</p>
(b) receiving data regarding one or more telephony events associated with the telephone call;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(c) matching said one or more received telephony events with said call record;	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>
(d) updating said call record based on said received telephony event data; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

**U.S. Pat. No. 6,785,370 Invalidity Chart**

370 Claim	Prior Art Reference(s)	Invalidity Bases
(e) combining said updated call record with data indicating one or more locations of recorded audio data for two or more segments of the call, to obtain a master call record representing the lifetime of said telephone call.	<p>D3, col. 4, ll. 35-52; col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D5: D7, pp. 4-7, 10-12; D9, pp. 2-1, 2-12-2-25.</p> <p>D10: D10; D11: pp. 2-7- 2-12; D12: pp. 1-1 – 2-1.</p> <p>D11: pp. 2-7- 2-12.</p> <p>D12: pp. 1-1 – 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p> <p>It would have been obvious to one of ordinary skill in the art to combine D3 and D4. The motivation for this combination is provided in Claim 1, above.</p>

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: U.S. Patent No. 5,048,079, priority date of Aug. 10, 1990, and issue date of Sep. 10, 1991. (WSNSDE0003251-72) D1 discloses a method and apparatus for matching call records with corresponding PBX data using a probability factor.</p> <p>D2: U.S. Patent No. 6,002,753, priority date of Oct. 5, 1994, and issue date of Dec. 14, 1999. (WSNSDE0005882-925) D2 discloses an apparatus and method for exchanging telephone call information between two computers.</p> <p>D3: U.S. Patent No. 5,559,875, priority date of Jul. 31, 1995, and issue date of Sep. 24, 1996. (WSNSDE0004992-5027) D3 discloses a method and apparatus for recording and playback of audio conferences.</p> <p>D4: U.S. Patent No. 5,982, 857, priority date of Oct. 17, 1994, and issue date of Nov. 9, 1999. (WSNSDE0005823-37) D4 discloses a system and method for recording and playback of telephone calls.</p> <p>D5: Blue Cross Blue Shield Eclipse Integration, sold or offered for sale in the U.S. before June 8, 1999.</p> <p>D6: Blue Cross Blue Shield User Guide dated January 29, 1997 (illustrating system of D5) (WSNSDE0012983-92)</p> <p>D7: Application Development Guide - Blue Cross / Blue Shield Eclipse Project Eclipse Modification and Design dated November 25, 1997 (illustrating system of D5) (WSNSDE0012967-82).</p>	

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D8: "Tracking Agent Id through Inter-Site Call Transfers" (illustrating the system of D5) (WSNSDE0012993-4).</p> <p>D9: "E1000 for Windows User Guide" dated July 1997 (illustrating the system of the D5) (WSNSDE0011276-346).</p> <p>D10: Equiserve Recording Proposal presented in the U.S. on May 5, 1999, which before June 8, 1999. (WSNSDE013106)</p> <p>D11: "E-Ware Replay-User Guide" dated November 1998 (illustrating the system of D5 and D10) (WSNSDE011798-844).</p> <p>D12: "Unify System Managers Guide" dated August 1996 (illustrating the system of D10) (WANSDE012044-70).</p>	

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
<p>6. A method for recording information regarding telephone calls comprising one or more segments, comprising:</p>		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. § 102(e) as anticipated by D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
(a) receiving audio data regarding one or more telephone call segments relating to one or more telephone calls,	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 35-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66; col. 4 ln. 66 col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	
and data regarding telephony events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(b) storing the received audio data regarding telephone call segments;	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 2-25.</p> <p>D10: D10; D11: pp. 2-7 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	

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570 Claim	Prior Art Reference(s)	Invalidity Bases
(c) storing the received data regarding telephony events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(d) identifying telephone call segments that relate to one telephone call; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.

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570 Claim	Prior Art Reference(s)	Invalidity Bases
(e) constructing a data representation of a lifetime of the telephone call using data regarding telephony events associated with the telephone call segments of the telephone call, wherein said data representation comprises, for each segment of the call, the location of the stored audio data of that segment and the start time, end time, and duration of that segment.	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52; col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. . 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
<p>7. A method for recording information regarding telephone calls comprising one or more segments, comprising:</p>		<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D1 and/or D2 in combination with D3 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. §103 as obvious in view of D3 in combination with D4.</p> <p>The motivation for these combination can be found in Claim 1, above.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D5.</p> <p>This claim is invalid under 35 U.S.C. §102(a) as anticipated by D10.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D11.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D12.</p>
<p>(a) receiving audio data regarding one or more telephone call segments relating to one or more telephone calls,</p>	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 35-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	

**U.S. Pat. No. 6,249,570 Invalidity Chart**

570 Claim	Prior Art Reference(s)	Invalidity Bases
and data regarding telephony events associated with said telephone call segments, wherein the data regarding telephony events is received from a plurality of sources connected to a telephone switching environment, wherein at least one of the sources is a real time link and at least one of the sources is not a real time link;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63, col. 7, ll. 7-53.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-7; D9, pg. 2-1</p> <p>D10: D10; D11: pp. 1-1, 2-1; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 1-1, 2-1.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(b) storing the received audio data regarding telephone call segments;	<p>D3, col. 2, ll. 1-15; col. 3, ll. 58-62; col. 4., ll. 53-63.</p> <p>D4, col. 3, ll. 30-54; col. 4, ll. 16-66.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	

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570 Claim	Prior Art Reference(s)	Invalidity Bases
(c) storing the received data regarding telephony events associated with said telephone call segments;	<p>D1, col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 13 ll. 19-25; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 4, ll. 35-52.</p> <p>D4, col. 4 ln. 66 – col. 5 ln. 13.</p> <p>D5: D7, pp. 4-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.
(d) identifying telephone call segments that relate to one telephone call; and	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 38-47; col. 11, ll. 34-47; col. 13, ln. 41 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.

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570 Claim	Prior Art Reference(s)	Invalidity Bases
(e) constructing a data representation of a lifetime of the telephone call using data regarding telephony events associated with the telephone call segments of the telephone call.	<p>D1, col. 2, ll. 22-34; col. 3, ln. 62 – col. 4 ln. 17; col. 7, ll. 27-62; col. 11, ll. 34-47; col. 13, ln. 19 – col. 14, ln. 59; col. 15, ll. 27-60.</p> <p>D2, col. 5, ll. 6-32; col. 22, ll. 18-21; col. 22, ll. 52-56; col. 25, ll. 18-29.</p> <p>D3, col. 5, ln. 30 – col. 6, ln. 6; col. 9, ll. 9-58; col. 9, ln. 60 – col. 11, ln. 34.</p> <p>D4, col. 5 ll. 14-33.</p> <p>D5: D7, pp. 5, 10-12; D9, pp. 2-1, 2-12 – 2-25.</p> <p>D10: D10; D11: pp. . 2-7 – 2-12; D12: pp. 1-1, 2-1.</p> <p>D11: pp. . 2-7 – 2-12.</p> <p>D12: pp. 1-1, 2-1.</p>	<p>It would have been obvious to one of ordinary skill in the art to combine D1 and/or D2 with D3 and/or D4. The motivation for this combination is provided in Claim 1, above.</p>

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371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: Racal Rapidax, sold in the U.S. as of at least December 21, 1992.</p> <p>D2: Racal s Rapidax Voice Logging Recorders Offers Instant Message Recall of Multichannel Calls, Transmissions. (NSDE008300-008302) (evidencing the hardware of the D1 sale).</p> <p>D3: Rapidax Access Voice Logging Recorder. (NSDE008312-008319) (evidencing the hardware of the D1 sale).</p> <p>D4: Rapidax Instant Call Recorder, (NSDE008305-008309) (illustrating the hardware of the D1 sale).</p> <p>D5: Rapidax in Surveillance and Security Monitoring (NSDE008310-008311) (evidencing the hardware of the D1 sale).</p> <p>D6: Operator s Manual. (NSDE008320-008324) (evidencing the hardware of the D1 sale).</p> <p>D7: System Manager s Manual. (NSDE008325-008340) (evidencing the hardware of the D1 sale).</p> <p>D8: Rapidax Tape Archive and System Network. (NSDE008303-008304) (evidencing the hardware of the D1 sale).</p> <p>D9: Deposition of Andrew Jackson in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008273-008299) (evidencing the hardware of the D1 sale).</p> <p>D10: Expert Report on the Invalidity of U.S. Patent No. 5,396,371 in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008447-008468) (evidencing the hardware of the D1 sale).</p>	

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371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D11: United States Patent No. 4,891,835, to Leung, filed on Aoruk 30, 1986, issued on June 2, 1990. (WSNSDE0003055-80)</p> <p>D12: Sale of Eyretel e1000, sold in the U.S. as of at least October, 1992.</p> <p>D13: Deposition of Chris Blair in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143 (illustrating the hardware of D12 sale).</p> <p>D14: European Patent Publication 0372894, to Koizumi, published on June 13, 1990, filed on December 5, 1989.(WSNSDE0000277-93)</p> <p>D15: U.S. Patent No. 4,905,141, to Brenza, issued February 27, 1990, filed on October 25, 1988.(WSNSDE0003096-126)</p> <p>D16: U.S. Patent No. 4,864,543, to Ward, issued September 5, 1989, filed on April 30, 1987. (WSNSDE0002971-84)</p> <p>D17: "The Disk Drive As An Audio Recorder," Hard Disk Recording Conference, published on Mary 16-17, 1990. (LOOSABLLP 002304-15)</p> <p>D18: "An Experimental Speech Storage and Editing Facility," The Bell System Technical Journal, published in October 1980. (LOOSABLLP 002317-002330)</p> <p>D19: Mediation Brief, Analysis of Prior Art Which Anticipates or Renders Obvious the Claims of U.S. Patent No. 5,396,371, in Dictaphone Corporation vs. Mercom Systems, Inc., Civil Action 3:00CV1143 (evidencing hardware of D1). (LOOSABLLP 002292-002302)</p> <p>D20: United States Patent No. 4,375,083, to Maxemchuk, issued on February 22, 1983. (LOOSABLLP</p>	

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371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>002332-002355)</p> <p>D21: Japanese Publication No. S62-20460, to Hirokawa, published on January 29, 1987. (LOOSABLLP 002357-002364)</p> <p>D22: "Memory Space Allocation of Messages in Voice Mail," IBM Technical Disclosure Bulletin, published in July 1987. (LOOSABLLP 002366-002367)</p> <p>D23: "A Magnetic Storage Disk Based Digital Audio Recording, Editing and Processing System," presented to the public at the 83<sup>rd</sup> AES Corporation on October 16-19, 1987. (002381-002398)</p> <p>D24: "A Flexible Digital Sound-Editing Program for Minicomputer Systems," presented to the public at the 68<sup>th</sup> Convention of the Audio Engineering Society in Hamburg, German, Journal of Audio Engineering Society, on March 17-20, 1981. (NSDE008479-86)</p> <p>D25: NICE's Markman Brief in Dictaphone Corporation vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE014561-603) (evidencing hardware of D24)</p>	
<p>1. In a method of storing and retrieving audio from a digital audio logger, the steps comprising:</p>	<p>D1: D2, Pages 1-2; D9, Page 8, line 17 Page 9, line 4.</p> <p>D12: D13, Page 11, lines 7-8.</p> <p>D11: Col. 2, lines 10-14.</p> <p>D17: Page 16, Para. 5.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D17 and/or D21.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D17 in combination with D1 and/or D12 and/or D14 and/or D18 and/or D21 and/or D23.</p>
<p>a) monitoring an audio source,</p>	<p>D1: D8, Page 1; D4, Page 4.</p>	

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371 Claim	Prior Art Reference(s)	Invalidity Bases
	D11: Col. 3, lines 42-50. D12: D13, Page 11, lines 7-8. D14: Col. 4, lines 24-30. D17: Page 17, Para. 3, 4.	
b) storing audio data from the audio source in a buffer,	D1: D9, Page 18, lines 10-14; D10, Page 9; D2, Page 2. D11: Figure 6, Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47. D12: D13, Page 11, lines 7-8. D14: Col. 5, lines 16-27. D17: Page 16, Para. 3-4; Page 18, Paragraphs 3, 4; Page 18, Para. 3; Page 20, Figure 1. D21: LOOSABLLP 002357, 002358. D23: Page 9, section 5.3.	
c) writing the audio data from the buffer onto a digital audio tape and a random access storage device, and	D1: D8, Page 1; D3, Page 3; D4, Page 4; D10; D9, Page 46, lines 2-20. D11: Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47, Col. 2, lines 29-36, Col. 2, lines 38-41. D12: D13, Page 11, lines 18-21. D14: Col. 3, lines 17-27, Col. 5, lines 35-41. D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53. D17: Page 16, Para. 6; Page 18, Para. 1-4. D18: Page 1385, Para. 2, 4; Page, 1388, Para. 2, 4; D19: Page 4, lines 7-8). D21: LOOSABLLP 002357, 002358. D23: Page 9, section 5.3.	<p>It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 and/or D17 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 and/or D18 and/or D23 and the random access memory of D21 with the digital recording and editing system of D17 to increase the audio channels that may be recorded</p>

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371 Claim	Prior Art Reference(s)	Invalidity Bases
		or the transfer rate of existing channels. .
d) retrieving audio from the random access storage device while audio data is written into the digital audio tape and the random access storage device.	<p>D1: D2, Page 1; D5, Page 1; D10, Page 10.</p> <p>D11: Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 4, lines 33-35, Col. 5, lines 35-41, Col. 6, lines 31-35.</p> <p>D12: D13, Page 11, lines 18-21.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D17: Page 1, Para. 6; Page 15, Para. 1; Page 17, Para. 4; Page 18, Para. 1-4.</p> <p>D21: LOOSABLLP 002357, 002358.</p> <p>D23: Page 9, section 5.3.</p>	It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 and/or D23 and/or the random access memory of D21 with the digital recording and editing system of D17 to retrieve data more efficiently and precisely and to write audio in the digital audio tape and the random access storage device in digital format.
5. In a system for processing audio having	<p>D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10; Page 15, lines 12-23, Page 22, lines 10-13.</p> <p>D17: Page 13, Para. 1.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15 and/or D16 and/or D20 and/or D23 and/or 24.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15 and/or D16 and/or D17 D18 and/or D20 and/or D21 and/or D22 and or D23 and/or D24.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D17 in combination with D1 and/or D11 and/or D12, and/or D15 and/or D16 and/or D18 and/or D20 and/or D21 and/or D22 and or D23 and/or D24.</p>
an interface for receiving audio from an audio source,	<p>D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page 15, lines 12-23, Page 22, lines 10-13.</p> <p>D17: Page. 16, Para. 3</p>	

## U.S. Pat. No. 5,396,371 Invalidity Chart

371 Claim	Prior Art Reference(s)	Invalidity Bases
a digital signal processor in communication with the interface for compressing the audio signals,	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, D10, Page 16.  D17: Page 16, Para. 3	
a controller in communication with the digital signal processor for receiving audio therefrom and arranging data in a prescribed order,	D1: D9, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page, 22, lines 10-13; D10, Page 16.  D17: Page 16, Para. 3, 5.	
a supervisor in communication with said controller accessing data from said system, and	D1: D9, Page 15, lines 12-23, Page 8, line 17 – Page 9, line 4, Page 10, line 13 – Page 11, line 10, Page, 22, lines 10-13; D10, Page 16.  D17: Page 16, Para. 3, 5.	
a buffer in communication with the controller for receiving arranged audio from the controller, the improvement comprising:	D1: D9, Page 10, line 13 – Page 11, line 10, Page 18, lines 10-14, Page 15, lines 13-23, Page 17, lines 7-20; D2, page 2; D10, Page 9.  D17: Page. 16, Para. 3	
a digital audio tape drive unit in communication with the buffer for receiving arranged audio data from the buffer,	D1: D9, Page 10, line 13 – Page 11, line 10, Page 18, lines 10-14, Page 15, lines 13-23, Page 17, lines 7-20; D2, Page 2; D10, Page 17.  D11: Col. 10, line 66 – Col. 11, line 54, Col. 9, lines 46-47, Col. 2, lines 29-36, Col. 2, lines 38-41, Col. 3, lines 31-47, Col. 7, lines 26-33.  D12: D13, Page 11, lines 18-21  D14: Col. 17, lines 30-54; Col. 2, lines 29-48.  D23: Page 9, section 5.3.	It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 and/or D23 with the system of D11 to store the same type of data in the DRAM and the recorder unit and to obtain a duplicate recording that requires less hardware.  It would have been obvious to one of ordinary skill in the art to incorporate the buffer of D1 and/or D11 and/or D12 with the modem of D14 to reduce loss of data resulting from data sent to the modem at a rate that exceeds the modem's capacity to process such data.  It would have been obvious to one of ordinary skill in the art to incorporate the digital audio tape of D1 and/or D12 and/or D14 and/or D23 with the digital recording and editing system of D17 to allow a greater number of channels that may be recorded or to increase the transfer rate of existing channels.
a random access storage device, and	D1: D4, NSDE008308, D9, Page 14, lines 9-25, NSDE008278, D10,	

## U.S. Pat. No. 5,396,371 Invalidity Chart

371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>NSDE008463.</p> <p>D11: Col. 2, lines 32-36, Col. 17, lines 18-54.</p> <p>D14: Col. 3, lines 17-27, Col. 2, lines 47-54.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D17: Page 15, Para. 3; Page 16, 1-4; Figure 4.</p>	
<p>a pair of pointers providing communication between said buffer and random storage device,</p> <p>the first of said pointers operative for transmitting audio data to said random access storage device from said buffer and the second of said pointers being operative to send audio data from said random access storage device to said controller.</p>	<p>D1: D9, Page 15, lines 12-23, Page 16, lines 8-19, Page 19, line 20 – Page 22, line 13; D3, Pages 2-3.</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41, Col. 4, lines 33-35, Col. 6, lines 31-35.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D17: Page 1, Para. 6; Page 15, Para. 1; Page 17, Para. 4; Page 18, Para. 3, 4.</p> <p>D18: Page 1385, Para. 4, Page 1387 Para. 2; Page 1388, Para. 2, 4.</p> <p>D20: Col. 13, lines 36-41; col. 14, lines 24-34; col. 15, lines 30-47.</p> <p>D22: LOOSABLLP 002366, line 14 – LOOSABLLP 002367, line 69.</p>	<p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D1 and/or D12 and/or D14 and/or D15 and/or D16 and/or D20 and/or D23 and/or 24 with the system of D11 to store and retrieve data efficiently and precisely while operating with a single buffer.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D14 in combination with D1 and/or D11 and/or D15 and/or D16 and/or D17 D18 and/or D20 and/or D21 and/or D22 and or D23 and/or D24 to store and retrieve data efficiently and precisely, and reduce loss of data resulting from an excessive transfer rate.</p> <p>This claim is invalid under 35 U.S.C. § 103(a) as obvious in view of D17 in combination with D1 and/or D11 and/or D12, and/or D15 and/or D16 and/or D18 and/or D20 and/or D21 and/or D22 and or D23 and/or D24 to store and retrieve data efficiently and precisely, and reduce loss of data resulting from an excessive transfer rate.</p>
<p>8. An audio data storage device, comprising:</p>	<p>D1: D3, Page 3.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D17: Page 13, Para. 1.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D11 in combination with D1 and/or D12 and/or D14 and/or D15 and/or D16</p>

## U.S. Pat. No. 5,396,371 Invalidity Chart

371 Claim	Prior Art Reference(s)	Invalidity Bases
	D19: Page 1385, Para. 2.	and/or D22.  This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D17 in combination with D1 and/or D12 and/or D14 and/or D15 and/or D16 and/or D22.
a random access storage device having a primary partition for storing audio data and a secondary partition for storing means for locating data on said primary partition and	<p>D1: D5, Page 1; D2, Page 1; D3, Page 3; D8, Page 1; D9, Page 46, lines 2-20, Page 19, line 17 – Page 20, line 14, Page 18, line 25 – Page 19, line 15, Page 15, lines 1-8; D10, Pages 12-13</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 2, lines 47-54.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D17: Page 17, Para. 4; Page 18, Para. 1-3, 5.</p> <p>D18: Page 1390, Para. 2-4.</p> <p>D20: Col. 10, lines 36-40.</p> <p>D24: Page 128, section 3.1.</p> <p>D25: Page, 24-25.</p>	<p>It would have been obvious to incorporate the partitions of D15 and/or D18 and/or D20 and/or D24 with the system of D11 and/or D12 and/or D14 to store and retrieve data more efficiently and precisely while operating with a single buffer.</p> <p>It would have been obvious to incorporate the partitions of D15 and/or D18 and/or D20 and/or D24 with the system of D17 to to store and retrieve data efficiently and precisely, and reduce loss of data resulting from an excessive transfer rate.</p>
a pair of pointers in communication with said random access memory, a first of said pointers being operated to transmit data to said random access storage device and the second of said pointers being operative to retrieve audio data from said random access storage device.	<p>D1: D9, Page 15, lines 12-23, Page 19, line 17 – Page 20, line 14, Page 18, line 25 – Page 19, line 15; D10, Pages 12-13, Pages 15-16.</p> <p>D11: Col. 17, lines 30-54; Col. 2, lines 29-48.</p> <p>D14: Col. 3, lines 17-27, Col. 5, lines 35-41, Col. 4, lines 33-35, Col. 6, lines 31-35.</p> <p>D15: Col. 3, lines 25-29, Col. 3, lines 35-38, Col. 3, lines 51-53.</p> <p>D16: Col. 2, line 62 – Col. 3, line 21, Col. 4, lines 11-33.</p>	<p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 with the system of D11 and/or D12 and/or D14 to retrieve data efficiently and precisely while operating with a single buffer.</p> <p>It would have been obvious to one of ordinary skill in the art to incorporate the pair of pointers of D16 and/or D18 and/or D20 and/or D22 with the system of D11 and/or D12 and/or D14 to store and retrieve data efficiently and precisely while operating with a single buffer.</p> <p>It would have been obvious to one of</p>

**U.S. Pat. No. 5,396,371 Invalidity Chart**

371 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D17: Page 1, Para. 6; Page 15, Para. 1; Page 17, Para. 4; Page 18, Para. 3, 4.</p> <p>D18: Page 1385, Para. 4, Page 1387 Para. 2; Page 1388, Para. 2, 4.</p> <p>D20: Col. 13, lines 36-41; col. 14, lines 24-34; col. 15, lines 30-47.</p> <p>D22: LOOSABLLP 002366, line 14 – LOOSABLLP 002367, line 69.</p> <p>D24: Page 128, section 3; Page 129, section 6.1; Page 130, section 7.1.</p> <p>D25: Page 23.</p>	<p>ordinary skill in the art to incorporate the pair of pointers of D16 and/or D18 and/or D20 and/or D22 with the system of D17 to store and retrieve data efficiently.</p>

**U.S. Pat. No. 6,870,920 Invalidity Chart**

920 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: U.S. Publication No. 2001/0043697 to Cox, published November 22, 2001, filed on May 11, 1998.(WSNSDE0000874-94)</p> <p>D2: PCT Publication No. WO 98/13995 to Smythe, published April 2, 1998, filed September 25, 1997.(WSNSDE0008433-77)</p> <p>D3: U.S. Patent No. 5,668,863 to Bieslin, filed April 26, 1996, claiming priority to U.S. Application Serial No. 08/509,390, filed June 31, 1995.(WSNSDE0005185-5222)</p>	
<p>1. A method for accessing information in at least one digital logger storing data associated with input from a plurality of input channels, comprising:</p>	<p>D1: Page 2, Para. 30; Page 2, para. 17.</p> <p>D2: Page 5, lines 11-12; Page 7, lines 10-20.</p> <p>D3: Col. 3, line 56 – Col. 4, line 10; Col. 10, lines 8-14; Col. 2, lines 4-7; Col. 3, lines 31-34.</p>	<p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2.</p>
<p>at a Web server having access to said at least one digital logger,</p>	<p>D1: Page 2, para. 17.</p> <p>D2: Page 5, lines 11-12.</p> <p>D3: Col. 10, lines 8-14; Col. 3, line 56 - Col. 4, line 22; Col. 2, lines 4-7; Col. 3, lines 31-34.</p>	<p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate the digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2. It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.</p>

**U.S. Pat. No. 6,870,920 Invalidity Chart**

<b>920 Claim</b>	<b>Prior Art Reference(s)</b>	<b>Invalidity Bases</b>
receiving a request for retrieval of stored data from a client;	D1: Page 10, claim 25.  D2: Page 20, lines 28-29.  D3: Col. 11, lines 18-22.	
retrieving stored data in accordance with the received request;	D1: Page 1, para. 40, 42.  D2: Page 21, lines 23-25.  D3: Col. 11, lines 18-22.	
and transferring the retrieved data to the client.	D1: Page 1, para. 42.  D2: Page 21, lines 23-25.  D3: Col. 11, lines 18-22.	
3. The method of claim 2 wherein the step of retrieving stored data comprises accessing call information for a record of an input channel made by said at least one digital logger.	D1: Page 2, para. 35.  D2: Page 21, lines 30 - Page 22, line 1.  D3: Col. 9, lines 13-17; Col. 4, lines 47-54.	<p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate D1 and/or D3 's digital logger associated with input from a plurality of input channels to make recordings available to more clients across a greater geographical area.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2 . It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.</p>
6. The method of This claim wherein the step of retrieving	D1: Page 8, para. 103; Page 8, para. 99.	This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.

## U.S. Pat. No. 6,870,920 Invalidity Chart

920 Claim	Prior Art Reference(s)	Invalidity Bases
<p>stored data comprises accessing archived data at the Web server corresponding to a record of an input channel made by said at least one digital logger.</p>	<p>D2: Page 21, lines 23-25.</p> <p>D3: Col. 3, lines 59-64.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D1 in combination with D2 and/or D3 . It would have been obvious to a person of ordinary skill in the art including the archived data at the Web server of D2 and/or D3 to have a backup archive for important recordings.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate D1 and/or D3 's digital logger associated with input from a plurality of input channels to make recordings available to more clients across a greater geographical area.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2 . It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.</p>
<p>16. A method for accessing information stored by at least one digital logger storing data associated with input from a plurality of communication channels, comprising:</p>	<p>D1: Page 2, Para. 30; Page 2, para. 17.</p> <p>D2: Page 5, lines 11-12; Page 7, lines 10-20.</p> <p>D3: Col. 3, line 56 – Col. 4, line 10; Col. 10, lines 8-14; Col. 2, lines 4-7; Col. 3, lines 31-34.</p>	<p>This claim is invalid under 35 U.S.C. §102(e) as anticipated by D1.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 .</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2 .</p>

## U.S. Pat. No. 6,870,920 Invalidity Chart

920 Claim	Prior Art Reference(s)	Invalidity Bases
at a Web server having access to said information stored by at least one digital logger over a communications network,	D1: Page 2, para. 17.  D2: Page 5, lines 11-12.  D3: Col. 10, lines 8-14; Col. 3, line 56 - Col. 4, line 22; Col. 2, lines 4-7; Col. 3, lines 31-34.	This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate the digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.  This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2 . It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.
receiving a request for retrieval of stored data from a user;	D1: Page 10, claim 25.  D2: Page 20, lines 28-29.  D3: Col. 11, lines 18-22.	
retrieving said stored data from said information in accordance with the received request;	D1: Page 1, para. 40, 42.  D2: Page 21, lines 23-25.  D3: Col. 11, lines 18-22.	
and transferring the retrieved data to the client.	D1: Page 1, para. 42.  D2: Page 21, lines 23-25.  D3: Col. 11, lines 18-22.	
18. The method of claim wherein the step of retrieving stored data comprises accessing call information for a record of a communication channel made by said at least one digital logger.	D1: Page 2, para. 35.  D2: Page 21, lines 30 - Page 22, line 1.  D3: Col. 9, lines 13-17; Col. 4, lines 47-54.	This claim is invalid under 35 U.S.C. §102(e) as anticipated by D1.  This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.  This claim is invalid under 35 U.S.C.

## U.S. Pat. No. 6,870,920 Invalidity Chart

920 Claim	Prior Art Reference(s)	Invalidity Bases
		<p>§102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate D1 and/or D3 's digital logger associated with input from a plurality of input channels to make recordings available to more clients across a greater geographical area.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D3 in combination with D1 and/or D2 . It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.</p>
<p>21. The method of This claim6 wherein the step of retrieving stored data comprises accessing archived data at the Web server corresponding to a record of a communication channel made by said at least one digital logger.</p>	<p>D1: Page 8, para. 103; Page 8, para. 99.</p> <p>D2: Page 21, lines 23-25.</p> <p>D3: Col. 3, lines 59-64.</p>	<p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D2.</p> <p>This claim is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D1 in combination with D2 and/or D3 . It would have been obvious to a person of ordinary skill in the art including the archived data at the Web server of D2 and/or D3 to have a backup archive for important recordings.</p> <p>This claim is invalid under 35 U.S.C. §103(a) as obvious in view of D2 in combination with D1 and/or D3 . It would have been obvious to one of ordinary skill in the art to incorporate D1 and/or D3 's digital logger associated with input from a plurality of input channels to make recordings available to more clients across a greater geographical area.</p> <p>This claim is invalid under 35 U.S.C.</p>

**U.S. Pat. No. 6,870,920 Invalidity Chart**

920 Claim	Prior Art Reference(s)	Invalidity Bases
		§103(a) as obvious in view of D3 in combination with D1 and/or D2 . It would have been obvious to one of ordinary skill in the art to incorporate the web server and digital logger associated with input from a plurality of input channels of D1 and/or D2 to make recordings available to more clients across a greater geographical area.

**U.S. Pat. No. 5,819,005 Invalidity Chart**

005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
	<p>D1: Sale of Eyretel e1000, sold in the U.S. as of at least October, 1992. See 30(b)(6) Deposition of Chris Blair in Dictaphone Corp. vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143.</p> <p>D2: e1000 Circuit Diagrams (illustrating the hardware of the D1 sale).(WSNSDE0013861-94)</p> <p>D3: E1000/E500 Recorder: Engineer Familiarisation (illustrating the hardware of the D1 sale.)( WSNSDE0015161-98)</p> <p>D4: U.S. Patent No. 5,724,738, to Daly et al., filed on December 31, 1991. (WSNSDE0008620-5)</p> <p>D5: Digital Audio Tape For Data Storage , IEEE Spectrum, October, 1989. (WSNSDE0010785-9)</p> <p>D6: Racal Rapidax, sold in the U.S. as of at least December 21, 1992.</p> <p>D7: Racal s Rapidax Voice Logging Recorders Offers Instant Message Recall of Multichannel Calls, Transmissions. (NSDE008300-008302) (evidencing the hardware of the D6 sale).</p> <p>D8: Rapidax Access Voice Logging Recorder. (NSDE008312-008319) (evidencing the hardware of the D6 sale).</p> <p>D9: Rapidax Instant Call Recorder, (NSDE008305-008309) (illustrating the hardware of the D6 sale).</p> <p>D10: Rapidax in Surveillance and Security Monitoring (NSDE008310-008311) (evidencing the hardware of the D6 sale).</p> <p>D11: Operator s Manual. (NSDE008320-008324) (evidencing the hardware of the D6 sale).</p> <p>D12: System Manager s Manual. (NSDE008325-008340) (evidencing the hardware of the D6 sale).</p>	

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
	<p>D13: "Rapidax Tape Archive and System Network." (NSDE008303-008304) (evidencing the hardware of the D6 sale).</p> <p>D14: Deposition of Andrew Jackson in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008273-008299) (evidencing the hardware of the D6 sale).</p> <p>D15: Expert Report on the Invalidity of U.S. Patent No. 5,396,371 in Dictaphone CorPage vs. Nice Systems, Ltd., dated June 21, 2002, Civil Action 3:00CV1143. (NSDE008447-008468) (evidencing the hardware of the D6 sale).</p>	
1. A modular digital recording logger, comprising:	<p>D1: D2 and D3.</p> <p>D4: Col. 1, lines 28-58.</p> <p>D6: D7, Pages 1-3.</p>	<p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D1 (evidenced by D1-D3).</p> <p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).</p> <p>Claim 1 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.</p>
a housing;	<p>D1: D2, and D3 Page 9.</p> <p>D4: Col. 2, lines 15-19, Col. 3, lines 28-32.</p> <p>D6: D7, Pages 1-3; D8, Page 4.</p>	
at least two circuit modules in said housing for converting analog voice signals to digital voice signals, each of said circuit modules including at least two terminals for receiving said analog voice signals, each of said terminals being capable of receiving said analog voice signals for recording a two-way	<p>D1: D2, and D3 Pages 2-5.</p> <p>D4: Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.</p> <p>D6: D7, Page 2; D8, Page 6.</p>	

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
conversation;		
a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data;	D1: D2, and D3 Page 6. D4: Col. 2, line 65 Col. 3, line 2. D6: D7, Page 2; D8, Page 6.	
a first bus in said housing for providing communication between said circuit module and said compressing circuit;	D1: D2, and D3 Pages 2-7. D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8. D6: D7, Page 2; D8, Page 6.	
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus; and	D1: D2, and D3 Pages 2-7. D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8. D6: D7, Pages 1-3, D8, Page 6.	
a digital audio tape (DAT) drive for storing said compressed voice data.	D1: D2 and D3 Pages 2, 6-7, and 13-15. D5: Entire Article. D6: D10, Page 1; D13, Page 2; D12, Pages 6-16.	The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer of D4, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for the purpose of backup storage and archiving of digital data.  D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.
3. The modular digital recording logger of claim 1, further including a speaker in communication with at least one circuit module.	D1: D2 and D3 Pages 8-9. D6: D8, Page 7.	Claim 3 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 3 is invalid under 35 U.S.C. §102(b) as anticipated by D6

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
		(evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).
4. The modular digital recording logger of claim 1, further comprising a hard disk drive in said housing for storing and reproducing said compressed voice data.	D1: D2, D3 pages 2, 11-16.  D4: Col. 2, lines 15-19; Col. 1, lines 55-58.  D6: D7, Pages 1-3; D8, Page 7.	Claim 4 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 4 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).  Claim 4 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 1.
6. The modular digital recording logger of claim 1, wherein said first bus is a time division multiplexing (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.  D6: D7, Page 2; D8, Page 6.	Claim 6 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 6 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).  Claim 6 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5. See motivation to combine from Claim 1.
11. A network system of modular digital recording loggers, comprising:	D1: D2, and D3 Pages 2, 17.  D6: D7, Pages 1-3; D8, Pages 2-6.	Claim 11 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 11 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).  Claim 11 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1 and/or D5.
at least two digital recording loggers for logging voice	D1: D2, and D3 Pages 2, 17.	It would have been obvious to one of ordinary skill in the art to utilize

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
conversations, each of said recording loggers comprising:	D6: D7, Pages 1-3; D8, Pages 2-6.	multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access to stored digital voice signals on remote computers or devices, as in D1.
a housing;	D1: D2, and D3 Page 9.  D4: Col. 2, lines 15-19, Col. 3, lines 28-32.  D6: D7, Pages 1-3; D8, Page 4.	
a circuit in said housing for converting analog voice signals to and from digital voice signals, said circuit modules including at least two terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,	D1: D2, and D3 Pages 2-5.  D4: FIG. 1; Col. 1, lines 44-49 and lines 55-58; Col. 2, lines 4-10; Col. 3, lines 13-21; Col. 4, lines 3-6.  D6: D7, Page 2; D8, Page 6.	
a circuit in said housing for compressing said digital voice signals received from each of said circuit modules to provide compressed voice data,	D1: D2, and D3 Page 6.  D4: Col. 2, line 65 Col. 3, line 2.  D6: D7, Page 2; D8, Page 6.	
a first bus in said housing for providing communication between said circuit module and said compressing circuit,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.  D6: D7, Pages 1-3, D8, Page 6.	
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said circuit modules on said first bus,	D1: D2, and D3 Pages 2-7.  D4: FIG. 1; Col. 2, lines 2-6, and line 58 to Col. 3, line 8.  D6: D7, Pages 1-3, D8, Page 6.	

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
a digital audio tape (DAT) drive for storing said compressed voice data,	D1: D2 and D3 Pages 2, 6-7, and 13-15.  D5: Entire Article.  D6: D10, Page 1; D13, Page 2; D12, Pages 6-16.	D1 teaches a DAT drive for use in the system of D4. The DAT in D1 is used to store compressed data. The DAT may be used as backup storage to the host computer, which "stores" data from the voice processing board. It would have been obvious to one of ordinary skill in the art to include the DAT of D1 in the system of D4 for backup storage and archiving digital data.  D5 discloses the use and advantages of DAT as high density storage for backing up voice data. It would have been obvious to one of ordinary skill in the art to include the DAT of D5 in the system of D4 for backup storage and archiving digital data.
a hard disk drive in said housing for storing and reproducing said compressed voice data,	D1: D2, D3 pages 2, 11-16.  D4: Col. 2, lines 15-19; Col. 1, lines 55-58.  D6: D7, Pages 1-3; D8, Page 7.	
a first computer in said housing for operating said DAT drive and/or said hard disk drive to store and reproduce said digital voice signals, and	D1: D2 and D3 Pages 2, 6-7, and 11-15.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2; D12, Pages 2-16.	
a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive;	D1: D2 and D3 Pages 2, 6-7, and 11-15.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2.	One or more buses may be added to D4 to communicate with the DAT in addition to the hard disk drive, which is a matter of design choice. It would have been obvious to one of ordinary skill in the art to use a single bus to reduce the number of communication channels required to supply digital data to the DAT and hard disk, as in D1.
a second computer for processing compressed digital voice signals received from each of said recording loggers; and	D1: D2 and D3 Pages 2, 17.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2.	It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital

**U.S. Pat. No. 5,819,005 Invalidity Chart**

<b>005 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
		voice signals from a single location.
a third bus connecting each of said recording loggers to said second computer.	D1: D2 and D3 Pages 2, 17.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2.	It would have been obvious to one of ordinary skill in the art to connect multiple digital voice processing systems of D4 with one or more buses, as in D1, and to permit computer access to stored digital voice signals, to permit remote access of digital voice signals from a single location.
13. The network system of claim 11, wherein said third bus is a local area network (LAN) bus.	D1: D2, D3 Pages 2, 12-17.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2; D12, Pages 2-16.	Claim 13 is invalid under 35 U.S.C. §102(b) as anticipated by D1 and/or D6, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1 and/or D6.  RS 485 serial connections, which can carry compressed voice data, are LANs. Alternatively, if RS485 is not a LAN, replacing RS485 with a LAN would have been obvious to one of ordinary skill in the art as a matter of design choice.
15. The network system of claim 11, wherein said first bus is a time division multiplexed (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.	D1: D2, and D3 Pages 2-7.  D4: FIG. 1, Col. 2, line 58 to Col. 3, line 8.  D6: D7, Pages 1-3; D8, Page 6.	Claim 15 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 15 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).  Claim 15 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1. See motivation to combine from Claim 11.
20. The network system of claim 11, wherein said second computer is a workstation.	D1: D2, and D3 Pages 2, 17.  D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2; D12, Pages 2-16.	Claim 20 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 20 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1.  It would have been obvious to one of ordinary skill in the art utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access and replay to stored digital voice signals

**U.S. Pat. No. 5,819,005 Invalidity Chart**

005 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
		<p>on remote devices, as in D1, to permit a distributed system of recorders.</p> <p>Claim 20 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).</p>
<p>21. The network system of claim 11, further comprising a speaker in communication with said second computer for reproducing said analog voice signals.</p>	<p>D1: D2, and D3 Pages 2, 17.</p> <p>D6: D7, Pages 1-3; D8, Pages 2-6; D10, Pages 1-2; D12, Pages 2-16.</p>	<p>Claim 21 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 21 is invalid under 35 U.S.C. §103 as obvious in view of D4 in combination with D1.</p> <p>It would have been obvious to one of ordinary skill in the art to utilize multiple digital voice processing systems of D4 to increase capacity for voice processing, and to permit access and replay to stored digital voice signals on remote devices, as in D1, to permit a distributed system of recorders.</p> <p>Claim 21 is invalid under 35 U.S.C. §102(b) as anticipated by D6 (evidenced by D7-D15), and in the alternative, under 35 U.S.C. §102(a) as anticipated by D6 (evidenced by D7-D15).</p>

**U.S. Pat. No. 6,959,079 Invalidity Chart**

079 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>D1: Teknekron Infoswitch website, dated July 1997.(WSNSDE0010761)</p> <p>D2: U.S. Patent No. 5,790,798 to Beckett II, et al., issued August 4, 1998, filed May 31, 1996. (WSNSDE0005413-31)</p> <p>D3: U.S. Patent No. 5,867,559 to Jorgenson, et al., issued February 2, 1999, filed February 20, 1996. (WSNSDE0005592-600)</p> <p>D4: U.S. Patent No. 6,263,049 B1 to Kuhn, issued July 17, 2001, filed September 25, 1997, claiming priority to U.S. Provisional Application Serial No. 60/028,192 filed October 10, 1996. (WSNSDE0006158-71)</p> <p>D5: U.S. Patent No. 6,370,574 to House, et al., issued April 9, 2002, filed December 16, 1998. (WSNSDE0006331-55)</p> <p>D6: U.S. Patent No. 6,600,821 to Chan, et al., issued July 29, 2003, filed October 26, 1999. (WSNSDE0006684-94)</p> <p>D7: U.S. Patent No. 6,404,857 to Blair, et al., issued on June 11, 2002, filed February 10, 2000, claiming priority to U.S. Patent Application Ser. No. 08/936,428, filed September 24, 1997. (WSNB018866-74)</p>	
<p>1. A monitoring system for monitoring interactions of an agent with customers comprising:</p>	<p>D1: Desktop Screen Capture page.</p> <p>D2: column 1, lines 21-25, and lines 52-56.</p> <p>D3: column 1, lines 7-9.</p> <p>D4: column 1, lines 14-17, and lines 28-30.</p> <p>D5: column 1, lines 35-38, and column 1, line 66 column 2, line 3.</p>	<p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D2.</p> <p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D3.</p> <p>Claim 1 is invalid under 35 U.S.C. §102(e) as anticipated by D4.</p> <p>Claim 1 is invalid under 35 U.S.C. §102(e) as anticipated by D5.</p>

## U.S. Pat. No. 6,959,079 Invalidity Chart

079 Claim	Prior Art Reference(s)	Invalidity Bases
a voice logger to receive and record audio of a telephone call of said agent;	D1: Desktop Screen Capture page. D2: column 15, lines 20-27. D3: column 1, lines 52-56. D4: column 9, lines 45-61. D5: column 6, lines 7-23.	
a screen logger to receive and record video screen data associated with interactions of said agent with a computer during the telephone call; and	D1: Desktop Screen Capture page. D2: column 4, lines 33-50. D3: column 1, lines 56-61, and column 1, line 66 column 2, line 4. D4: column 9, lines 45-61. D5: column 6, lines 7-23.	
an event manager to determine whether said interactions with the computer during the telephone call meet at least one predefined monitoring condition.	D1: On Demand page. D2: column 6, lines 15-26. D3: column 3, lines 25-33. D4: column 11, lines 1-14. D5: column 17, lines 8-13.	
3. The monitoring system of claim 1, wherein said event manager is able to instruct said voice logger to begin recording of an audio portion of said telephone call and to instruct said screen logger to begin recording generally in synchronicity with said voice logger at least a portion of said video screen data when said monitoring condition is satisfied.	D1: Desktop Screen Capture page; On Demand page. D2: column 4, lines 33-50; column 6, lines 15-26. D3: column 1, lines 56-61; column 1, line 66 column 2, line 4; column 3, lines 25-33. D4: column 9, lines 45-61; column 11, lines 1-14. D5: column 6, lines 7-23; column 17, lines 8-13.	Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D1. Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D2. Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D3. Claim 1 is invalid under 35 U.S.C. §102(e) as anticipated by D4. Claim 1 is invalid under 35 U.S.C. §102(e) as anticipated by D5.
6. The monitoring system of claim 5, wherein said evaluator is able to perform automated evaluations based on predefined programming.	D1: P&Q Review page. D4: column 9, lines 32-36. D6: column 4, line 56 column 5, line	Claim 6 is invalid under 35 U.S.C. §102(b) as anticipated by D1. Claim 6 is invalid under 35 U.S.C. §102(e) as anticipated by D4.

**U.S. Pat. No. 6,959,079 Invalidity Chart**

079 Claim	Prior Art Reference(s)	Invalidity Bases
	<p>6.</p> <p>D7: column 3, lines 7-43.</p>	<p>Claim 6 is invalid under 35 U.S.C. §103 as obvious in view of D6 in combination with D1 and/or D4.</p> <p>Claim 6 is invalid under 35 U.S.C. §103 as obvious in view of D6 in combination with D1 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. § 103 as being obvious over D6 in combination with D1 and/or D4. It would have been obvious to one of ordinary skill in the art to incorporate the voice recognition technology of D6 into the call center monitoring system of D1 or D4 in order to detect problematic calls among those stored in the system.</p> <p>Claim 6 is invalid under 35 U.S.C. §103 as obvious in view of D7 in combination with D1 and/or D4.</p> <p>This claim is invalid under 35 U.S.C. § 103 as being obvious over D7 in combination with D1 and/or D4. It would have been obvious to one of ordinary skill in the art to incorporate the voice recognition technology of D7 into the call center monitoring system of D1 or D4 in order to determine the quality of service provided during the call.</p>

**U.S. Pat. No. 5,274,738 Invalidity Chart**

<b>738 Claim</b>	<b>Prior Art Reference(s)</b>	<b>Invalidity Bases</b>
	<p>D1: U.S. Patent No. 4,995,054 to Boyd, Jr. et al., issued September 4, 1990, filed October 5, 1988. (WSNSDE0044270-76)</p> <p>D2: U.S. Patent No. 4,817,086 to Oye et al., issued March 18, 1989, filed August 27, 1986. (WSNSDE0044254-69)</p> <p>D3: U.S. Patent No. 4,573,140 to Szeto, issued February 25, 1986, filed March 30, 1983. (WSNSDE0002435-49)</p>	
1. A digital modular voice processing system comprising:		Claim 1 is invalid under 35 U.S.C. § 103 over D1, or in the alternative, 35 U.S.C. § 103 over D1 in combination with D2.
a) a host computer having a host processor, and a storage medium, a memory and a bus interface in communication with said host processor,	D1: Figure 5; column 3, lines 23-24; column 5, lines 47-48.	It is well known that PC-AT computers include a processor, storage medium, and a bus interface.
b) a first bus in communication with said bus interface,	D1: Figure 5; column 5, lines 47-48.	
c) a voice processing card having at least one digital signal processor and at least one application processor in communication with said at least one digital signal processor, a first interface providing communication between said at least one application processor and said first bus, and a first time division multiplexer chip in communication with said at least one digital signal processor,	<p>D1: Figure 5; Figure 6; Figure 8; column 4, lines 35-40; column 5, lines 43-67; column 3, lines 7-9.</p> <p>D2: Figure 1; Figure 3; column 3, lines 68- 61; column 7, lines 62-65.</p>	<p>D1 discloses each of the recited claim elements. The location of these chips is merely a matter of design choice.</p> <p>DS1/T1 lines are well known to be time division multiplexed (TDM). The switch line interface of D1 is a TDM chip.</p> <p>It would have been obvious to one of ordinary skill in the art to include the TDM bus and interface of D2 between the interface processor and signal processor of D1 to efficiently move large amounts of data between the two components using a single wire. This reduces the number of multiple channels needed between the interface processors 10 and signal processors 13.</p>

**U.S. Pat. No. 5,274,738 Invalidity Chart**

<b>738 Claim</b>	<b>Prior Art Reference(s)</b>	<b>Invalidity Bases</b>
d) a second bus in communication with said first time division multiplexer chip, and	D1: Figure 1; Figure 5; Figure 6; Figure 8; column 6, lines 25-27.	
e) at least one audio card including a second time division multiplexer chip that communicates with said second bus, an audio processor in communication with said second time division multiplexer chip, and a second interface in communication with said audio processor, said second interface having a plurality of ports that provide communication with communication lines.	D1: Figure 1; Figure 2, Figure 5; Figure 6; column 2, lines 29-39; column 4, lines 62-68.  D2: Figure 1; Figure 3; column 3, lines 68- 61; column 7, lines 62-65.	DS1/T1 lines are well known to be TDM. The DS1 line interface of D1 is a TDM chip.

**U.S. Pat. No. 6,775,372 Invalidity Chart**

372 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
	<p>D1: Blue Cross Blue Shield Eclipse, sold in the U.S. before June 2, 1998.</p> <p>D2: Blue Cross Blue Shield User Guide (illustrating hardware of D1 sale) (WSNSDE0012983-92)</p> <p>D3: Application Development Guide - Blue Cross / Blue Shield Eclipse Project Eclipse Modification and Design (illustrating hardware of D1 sale) (WSNSDE0012967-82)</p> <p>D4: Tracking Agent Id through Inter-Site Call Transfers (illustrating hardware of D1 sale)(WSNSDE0012993-4)</p> <p>D5: Blue Cross Blue Shield System Diagrams (illustrating hardware of D1 sale)(WSNSDE0013084-7;WSNSDE0013177-83)</p> <p>D6: e1000 Circuit Diagrams (illustrating the hardware of the D1 sale). (WSNSDE0013861-94)</p> <p>D7: E1000/E500 Recorder: Engineer Familiarisation (illustrating the hardware of the D1 sale.) (WSNSDE0015161-98)</p> <p>D8: U.S. Publication No. 2001/0043697 to Cox, published November 22, 2001, filed on May 11, 1998. (WSNSDE0000874-94)</p>	
1. A multi-stage data logging system comprising:	D1: D3, pg. 5; D5.	<p>Claim 1 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 1 is invalid under 35 U.S.C. §102(e) as anticipated by D8.</p>
a) a telecommunications ("telecom") stage receiving input from a plurality of communication channels;	<p>D1: D3, pgs. 5-6; D5.</p> <p>D8: paras. 46 to 48.</p>	
b) a recorder stage having one or more recorders, at least one recorder logging data associated with information transmitted on at least one of said plurality	<p>D1: D3, pgs. 5-7, and 16; D4, pgs. 3-5; D5; D6; D7.</p> <p>D8: paras. 34, 38, 39, 43, 58, 71-75, and 78.</p>	

**U.S. Pat. No. 6,775,372 Invalidity Chart**

<b>372 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
of communication channels;		
c) a distribution stage providing access to data logged in the recorder stage;	D1: D3, pgs. 5-8; D4, pgs. 4-5; D5. D8: para. 40-42.	
d) a first interface linking the telecom and the recorder stages and a second interface linking the recorder and the distribution stages;	D1: D3, pgs. 5-6; D4, pgs. 4-5; D5. D8: FIG. 1; para. 46-48.	
wherein at least two stages of the system are physically separable and in operation can be located wide distances apart.	D1: D3, pgs. 5-6; D4, pgs. 4-5; D5. D8: FIG. 1; para. 30-33.	
6. The data logging system of claim 1 wherein the telecom stage provides time stamping of the received input.	D1: D3, pgs. 5, 10; D4, pgs. 3-5; D5. D8: para. 35, 99.	Claim 6 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 6 is invalid under 35 U.S.C. §102(e) as anticipated by D8.
14. The data logging system of claim 1 wherein the distribution stage comprises:		Claim 14 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 14 is invalid under 35 U.S.C. §102(e) as anticipated by D8.
c1) a first interface receiving data from the recorder stage;	D1: D3, Page 5; D5. D8: para. 31, 40-45, 90-94, 108, 109.	
c2) a controller for directing and monitoring distribution stage operations;	D1: D2, pgs. 3-4, 7; D3, pgs. 5-7; D5. D8: para. 31, 40-45, 90-94, 108, 109.	
c3) a buffer for transitional data storage; and	D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5. D8: para. 31, 40-45, 90-94, 108, 109.	
c4) a second interface for distributing data to one or more output channels.	D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5. D8: para. 31, 40-45, 90-94, 108, 109.	
15. The data logging system of claim 1 wherein the	D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.	Claim 15 is invalid under 35 U.S.C. §102(b) as anticipated by D1.

## U.S. Pat. No. 6,775,372 Invalidity Chart

372 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
distribution stage comprises an archive storage device for archiving data.		
17. The data logging system of claim 15 wherein said archive storage device is a RAID array.		<p>Claim 17 is invalid under 35 U.S.C. §102(b) as obvious over D1.</p> <p>It would have been obvious to one of ordinary skill in the art to replace a hard disk drive, as in D1, with a RAID array, as was known in the art, to increase data integrity, data storage capacity, and/or fault-tolerance.</p>
19. The data logging system of claim 1 wherein the distribution stage comprises:		<p>Claim 19 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 19 is invalid under 35 U.S.C. §102(e) as anticipated by D8.</p>
an operating system software application and a computer capable of running said software application and accessing one or more remote serve computers.	<p>D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.</p> <p>D8: para. 31, 40-45, 90-94, 108, 109.</p>	
32. The data logging system of claim 1, wherein the distribution stage is implemented as a network server.	<p>D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.</p> <p>D8: para. 40-42.</p>	<p>Claim 32 is invalid under 35 U.S.C. §102(b) as anticipated by D1.</p> <p>Claim 32 is invalid under 35 U.S.C. §102(e) as anticipated by D8.</p>
33. The data logging system of claim 32, wherein the network server is a Web server.	<p>D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.</p> <p>D8: para. 40-42.</p>	<p>Claim 33 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1 in view of D8.</p> <p>Claim 33 is invalid under 35 U.S.C. §102(e) as anticipated by D8.</p> <p>D8 discloses a call center with call recording capabilities, where the call center is accessible via a web server and a browser. It would have been obvious to one of ordinary skill in the art to utilize a web server to permit remote access, as in D1, from web-based clients, as the world-wide-web is a popular and easily accessible network for remotely connecting to a</p>

**U.S. Pat. No. 6,775,372 Invalidity Chart**

<b>372 Claim</b>	<b>Prior Art Reference(s) (if applicable)</b>	<b>Invalidity Bases</b>
		computer/network.
34. The data logging system of claim 32, wherein the network server is a file server.	D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.  D8: para. 40-42.	Claim 34 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 34 is invalid under 35 U.S.C. §102(e) as anticipated by D8.
43. A data logger, comprising:		Claim 43 is invalid under 35 U.S.C. §102(b) as anticipated by D1.  Claim 43 is invalid under 35 U.S.C. §102(e) as anticipated by D8.
a telecommunication device receiving input from a plurality of communication channels;	D1: D6, and D7 Pages 2-5.  D8: paras. 46 to 48.	
a processor converting the received input to one or more data formats;	D1: D6, and D7 Pages 2-5.  D8: paras. 47 to 52.	
a memory for logging information about the received input, the information comprising data converted to at least one data format;	D1: D3, pgs. 5, 10; D4, pgs. 3-5; D5.  D8: para. 34-35, 38, 78, and 99.	
a communication path to a communications network; and	D1: D3, pgs. 5-8; D4, pgs. 4-5; D5.  D8: para. 40-42.	
a server having access to the memory via the communications network for transferring logged data from one or more of said plurality of communication channels via the communications network to at least one remote user.	D1: D3, pgs. 5-8; D4, pgs. 4-5; D5.  D8: para. 40-42.	
44. The data logger of claim 43 wherein the server is a Web server and the communications network is the Internet.	D1: D2, pg. 9, D3, pgs. 5-7, D4, pg. 3, D5.  D8: para. 40-42.	Claim 44 is invalid under 35 U.S.C. §102(b) as anticipated by D1, or in the alternative, under 35 U.S.C. §103 as obvious in view of D1 in view of D8.  Claim 44 is invalid under 35 U.S.C. §102(e) as anticipated by D8.

**U.S. Pat. No. 6,775,372 Invalidity Chart**

372 Claim	Prior Art Reference(s) (if applicable)	Invalidity Bases
		<p>D8 discloses a call center with call recording capabilities, where the call center is accessible via the Internet, a web server and a browser. It would have been obvious to one of ordinary skill in the art to utilize a web server to permit remote access, as in D1, from Internet-based clients, as the world-wide-web is a popular and easily accessible network for remotely connecting to a computer/network.</p>

# **EXHIBIT DD**

REDACTED